



TOWN OF JACKSON PLANNING & BUILDING DEPARTMENT

TRANSMITTAL MEMO

Town of Jackson

- ☒ Public Works/Engineering
- ☒ Building
- ☐ Title Company
- ☒ Town Attorney
- ☒ Police

Joint Town/County

- ☒ Parks and Recreation
- ☒ Pathways
- ☒ Housing Department

Teton County

- ☐ Planning Division

- ☐ Engineer
- ☐ Surveyor- *Nelson*
- ☐ Assessor
- ☐ Clerk and Recorder
- ☐ Road and Levee

State of Wyoming

- ☐ Teton Conservation
- ☐ WYDOT
- ☐ TC School District #1
- ☐ Game and Fish
- ☐ DEQ

Federal Agencies

- ☐ Army Corp of Engineers

Utility Providers

- ☐ Qwest
- ☐ Lower Valley Energy
- ☐ Bresnan Communications

Special Districts

- ☒ START
- ☒ Jackson Hole Fire/EMS
- ☐ Irrigation Company

<p>Date: May 30, 2019</p> <p>Item #: P19-137, 138</p> <p>Planner: Tyler Valentine Phone: 733-0440 ext. 1305 Fax: 734-3563 Email: tvalentine@jacksonwy.gov</p> <p>Owner: Base Camp, LLC PO Box 87 Cheyenne, WY 82001</p> <p>Applicant: Long Reimer Winegar Beppler Erica Nash PO Box 3070 Jackson, WY 83001</p>	<p style="text-align: center;">REQUESTS:</p> <p>The applicant is submitting a request for a Development Plan for the property located at 640 & 650 S Glenwood St, legally known as, Lot 4, BLK. 4, Karns 2nd Addition and Lots 5-6-7, BLK. 4, Karns-2.</p> <p>For questions, please call Tyler Valentine at 733-0440, x1305 or email to the address shown below. Thank you.</p>
<p>Please respond by: June 13, 2019 (Sufficiency) June 20, 2019 (with Comments)</p>	

RESPONSE: For Departments not using Trak-it, please send responses via email to:
tstolte@jacksonwy.gov



PLANNING PERMIT APPLICATION
Planning & Building Department

150 E Pearl Ave. | ph: (307) 733-0440
P.O. Box 1687 | www.townofjackson.com
Jackson, WY 83001

For Office Use Only

Fees Paid _____ Date & Time Received _____
Application #s _____

Please note: Applications received after 3 PM will be processed the next business day.

PROJECT.

Name/Description: South Glenwood Apartments
Physical Address: 640-650 South Glenwood, Jackson 83001
Lot, Subdivision: Lots 4,5,6, & 7 Block 4, Plat 128 PIDN: 22-41-16-33-1-38-006 / 22-41-16-33-1-38-011

PROPERTY OWNER.

Name: Base Camp, LLC c/o Frontier Registered Agency Services LLC Phone: 203.227.2390
Mailing Address: 2120 Carey Avenue, Cheyenne, WY ZIP: 82001
E-mail: plockitt@cohenandassociates.com

APPLICANT/AGENT.

Name: Erika M. Nash, Long Reimer Winegar LLP Phone: 307.734.1908
Mailing Address: PO Box 3070, Jackson, WY ZIP: 83001
E-mail: enash@lrw-law.com

DESIGNATED PRIMARY CONTACT.

____ Property Owner ☒ Applicant/Agent

TYPE OF APPLICATION. Please check all that apply; review the type of application at www.townofjackson/200/Planning

Use Permit	Physical Development	Interpretations
____ Basic Use	____ Sketch Plan	____ Formal Interpretation
____ Conditional Use	<input checked="" type="checkbox"/> Development Plan	____ Zoning Compliance Verification
____ Special Use	____ Design Review	Amendments to the LDRs
Relief from the LDRs	Subdivision/Development Option	____ LDR Text Amendment
____ Administrative Adjustment	____ Subdivision Plat	____ Map Amendment
____ Variance	____ Boundary Adjustment (replat)	Miscellaneous
____ Beneficial Use Determination	____ Boundary Adjustment (no plat)	____ Other: _____
____ Appeal of an Admin. Decision	____ Development Option Plan	____ Environmental Analysis

PRE-SUBMITTAL STEPS. To see if pre-submittal steps apply to you, go to www.townofjackson.com/200/Planning and select the relevant application type for requirements. Please submit all required pre-submittal steps with application.

Pre-application Conference #: _____ Environmental Analysis #: _____
Original Permit #: P-17 200 & 201 Date of Neighborhood Meeting: _____

SUBMITTAL REQUIREMENTS. Please ensure all submittal requirements are included. The Planning Department will not hold or process incomplete applications. Partial or incomplete applications will be returned to the applicant. Go to www.townofjackson.com/200/Planning and select the relevant application type for submittal requirements.

Have you attached the following?

- ☒ **Application Fee.** Fees are cumulative. Go to www.townofjackson.com/200/Planning and select the relevant application type for the fees.
- ☒ **Notarized Letter of Authorization.** A notarized letter of consent from the landowner is required if the applicant is not the owner, or if an agent is applying on behalf of the landowner. Please see the Letter of Authorization template at www.townofjackson.com/DocumentCenter/View/102/Town-Fee-Schedule-PDF.
- ☒ **Response to Submittal Requirements.** The submittal requirements can be found on the TOJ website for the specific application. If a pre-application conference is required, the submittal requirements will be provided to applicant at the conference. The submittal requirements are at www.townofjackson.com/200/Planning under the relevant application type.

Note: Information provided by the applicant or other review agencies during the planning process may identify other requirements that were not evident at the time of application submittal or a Pre-Application Conference, if held. Staff may request additional materials during review as needed to determine compliance with the LDRs.

Under penalty of perjury, I hereby certify that I have read this application and associated checklists and state that, to the best of my knowledge, all information submitted in this request is true and correct. I agree to comply with all county and state laws relating to the subject matter of this application, and hereby authorize representatives of Teton County to enter upon the above-mentioned property during normal business hours, after making a reasonable effort to contact the owner/applicant prior to entering.

Signature of Property Owner or Authorized Applicant/Agent

Erika M. Nash

Name Printed



May, 29, 2019

Date

Special Limited Manager Agent

Title

LETTER OF AUTHORIZATION

Base Camp, LLC, "Owner" whose address is: PO Box 87
Cheyenne, WY 82001

(NAME OF ALL INDIVIDUALS OR ENTITY OWNING THE PROPERTY)

Base Camp, LLC, as the owner of property
more specifically legally described as:

See Exhibit A

(If too lengthy, attach description)

HEREBY AUTHORIZES

Enke M. Nesh

as

agent to represent and act for Owner in making application for and receiving and accepting on Owners behalf, any permits or other action by the Town of Jackson, or the Town of Jackson Planning, Building, Engineering and/or Environmental Health Departments relating to the modification, development, planning or replatting, improvement, use or occupancy of land in the Town of Jackson. Owner agrees that Owner is or shall be deemed conclusively to be fully aware of and to have authorized and/or made any and all representations or promises contained in said application or any Owner information in support thereof, and shall be deemed to be aware of and to have authorized any subsequent revisions, corrections or modifications to such materials. Owner acknowledges and agrees that Owner shall be bound and shall abide by the written terms or conditions of issuance of any such named representative, whether actually delivered to Owner or not. Owner agrees that no modification, development, platting or replatting, improvement, occupancy or use of any structure or land involved in the application shall take place until approved by the appropriate official of the Town of Jackson, in accordance with applicable codes and regulations. Owner agrees to pay any fines and be liable for any other penalties arising out of the failure to comply with the terms of any permit or arising out of any violation of the applicable laws, codes or regulations applicable to the action sought to be permitted by the application authorized herein.

Under penalty of perjury, the undersigned swears that the foregoing is true and, if signing on behalf of a corporation, partnership, limited liability company or other entity, the undersigned swears that this authorization is given with the appropriate approval of such entity, if required.

OWNER:

Enke M. Nesh

(SIGNATURE) (SIGNATURE OF CO-OWNER)

Title: Special Limited manager Agent

(if signed by officer, partner or member of corporation, LLC (secretary or corporate owner) partnership or other non-individual Owner)

STATE OF Wyoming

)

)SS.

COUNTY OF Teton

)

The foregoing instrument was acknowledged before me by Enke M. Nesh this 1st day of April, 2019.

WITNESS my hand and official seal.

(Seal)

(Notary Public)

My commission expires:



EXHIBIT "A"
LEGAL DESCRIPTION

The land described herein is situated in the State of Wyoming, County of Teton, City of Jackson, described as follows:

AS TO PARCEL 1:

Lot 4 of Block 4 of the Second Karns Addition to the Town of Jackson, Teton County, Wyoming, according to that plat recorded in the Office of the Teton County Clerk on March 13, 1939 as Plat No. 128.

AS TO PARCEL 2:

Lots 5, 6, and 7 of Block 4 of the Second Karns Addition to the Town of Jackson, Teton County, Wyoming, according to that plat recorded in the Office of the Teton County Clerk on March 13, 1939 as Plat No. 128.

PIDN: 22-41-16-33-1-38-006, 22-41-16-33-1-38-011

Tyler Valentine
Senior Planner
Town of Jackson
P.O. Box 1687
Jackson, WY 83001

Re: Final Development Plan for 640-650 South Glenwood Street

May 21, 2019

Dear Tyler,

Please accept this Final Development Plan application ("FDP") for the residential development located at 640-650 South Glenwood Street. As a continuation of our Sketch Plan, which was unanimously approved on November 19, 2018, our goal is to provide 20-units of walkable, workforce housing in downtown Jackson. The architectural design and building materials blend with the character and scale of the surrounding neighborhood.

The key elements to the FDP are as follows:

- Our application continues to comply with all Land Development Regulations (LDRs)
- There are no requests for variances, waivers, or administrative adjustments to the LDRs.
- This application contains all the previously approved Sketch Plan elements that implement the Teton County Comprehensive Plan.
- This application addresses the conditions for approval outlined by the Town.
- This project offers an opportunity to replace the existing blighted home & cabin on this lot.

The details and supporting materials to the application are contained herein. Thank you for your guidance throughout this process and we look forward to working with you and your colleagues in the coming months. If you have any questions, please feel free to contact me at your convenience.

Best,



Elizabeth Whittaker, AIA
MERGE Architects, Principal
beth@mergearchitects.com
617 670 0265

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Introduction

Project Site & Description

1.0 Utilities

1.1 Water Supply

1.2 Wastewater Disposal

2.0 Vehicle Accessing & Parking

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2.2 Emergency Accessing

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5.0 Stormwater & Snow Management

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5.2 Stormwater Design

5.3 Pre- & Post-Development Site Runoff

5.4 Parking Lot Stormwater System Design

5.5 Snow Management

6.0 Construction Phasing & Staging

Appendix I - Water Supply Calculations

Appendix II - Wastewater Calculations

Appendix III - Vehicle Turning Analysis

Appendix IV - Stormwater Runoff

Project Description & Program

Project Description

The South Glenwood Apartments provide 20 rental apartments to be used for long-term workforce housing on what is currently an underutilized and unattractive site near the base of the Snow King resort. The proposed building will include one three story building providing street frontage on South Glenwood.

LDR Compliance

The site is located in the Planned Unit Development - Urban Residential Zone (PUD-NM-2). This proposal is designed to comply with the current regulations and received Sketch Plan approval from the Design Review Committee, the Planning Commission and the Town Council. No variances or waivers are sought.

Architectural Design

The architectural character of the new building is articulated in the “Adherence to Design Guidelines” section of this document.

Facade

The facade of the new building is 157' in total length, broken into three (3) approximately 42' wide masses with set back lobby entries at the junctions between volumes. This configuration creates the impression of three smaller buildings, in keeping with the scale of the existing neighborhood. The base of the building is concrete, and the upper floors are clad in wood. This speaks to a rooted mountain vernacular, while taking into account practical concerns of durability and maintenance. Windows and recessed balconies are used in concert to create an activated and inviting street presence.

Pedestrian Walkway

The building setback varies from 14'-3" to 37'-6" from the front face of the curb. This allows for a 5'-0" wide landscape buffer, 6'-0" wide sidewalk, and an additional landscape buffer of varying width before the face of the building. This project incorporates all Town of Jackson streetscape standards.

Parking on Site

All required parking will be provided on site. No street parking will be needed to meet the requirement.

Open Space

There will be a lawn area West of the building bulk for occupant comfort.

Site Staging

See attached sheet C2.0 for construction staging & phasing plan. This plan shows fencing locations, construction parking, stockpile, refuse, and material storage locations. Outside of the construction of the new sidewalk and alley paving, no work will need to be done within the Road Right of Way.

Adherence to Design Guidelines

Public Space

The character of the surrounding neighborhood is primarily residential, with the exception of “The Lift” restaurant at the site’s East.

The building’s siting creates an attractive front yard to the West that can be used by inhabitants during the warm months. Trees create a visual threshold between South Glenwood Street and the sidewalk (and the proposal preserves existing trees of significance). The project uses landscaped beds on the South, West & North to soften the building at its base and handle storm run-off. Around the backside of the building, the bike parking and trash/recycling enclosure shares the building’s cladding and roofline to elevate it above its utilitarian use.

The site is accessed vehicularly from South Glenwood Street and cars exit to the alley at the East. Parking is provided in a series of integrated garages and surface spaces. Snow-piling is provided in various locations across the site.

Composition, Massing & Street-Walls

The project has a one story base that supports three distinct, two-story volumes above it. This approach accommodates a generous amount of interior parking, while keeping with the smaller scale of the surrounding neighborhood. The intent of the base is to celebrate the human-scale at the ground level through a datum-line and a textural relief.

The design includes subtractive balconies and entryways that face the street, and sloping roofs that: reference the context (both the houses across the cul-de-sac and the mountains beyond); reduce the perceived scale of the buildings; limit the risk of snow shed; and open the possibility of utilizing solar energy (which is being considered for this project).

Materials

The base of the building uses architectural concrete-masonry block to visually anchor the mass and to provide durability during harsh winters. The upper levels of the building use vertically-oriented cedar siding in two widths to provide warmth, participate in the Jackson vernacular, and create texture. The building presents different visual experiences from different vantage points, but the cladding and composition of windows is given equal consideration on all sides.

The project’s signage will be limited to the address number and code-required parking signage, which will be in accordance with others in the neighborhood. The lighting will be the minimum quantity required to safely illuminate the walking paths at the front and the building’s entries.

Program Areas

The building houses 20 rental apartment units. Owner will maintain leases on all units to be used for long-term workforce housing. There are four unit types; four (4) studios, two (2) one-bedrooms, eleven (11) two-bedrooms, and three (3) three-bedrooms. Each unit will have a stackable washer/dryer. All units at grade could be converted to accessible units.

Unit Name	Unit Type	SF	# of Pkng Spaces	Pkng Space #
A101	1 Bed	570	1	21
B101	1 Bed	570	1	27
C101	3 Bed	1,212	2	29, 30
A201	3 Bed	1,123	2	18, 19
A202	2 Bed	801	2	16, 17
B201	2 Bed	731	1	26
B202	2 Bed	801	2	24, 25
B203	Studio	392	1	12
C201	2 Bed	789	1	9
C202	2 Bed	801	2	5, 28
C203	3 Bed	970	2	31, 32
A301	2 Bed	731	1	20
A302	2 Bed	801	2	13, 14
A303	Studio	392	1	15
B301	2 Bed	731	1	11
B302	2 Bed	801	2	22, 23
B303	Studio	392	1	10
C301	2 Bed	731	1	8
C302	2 Bed	801	2	6,7
C303	Studio	392	1	4
-	Visitor	-	3	1, 2, 3
	20 units	14,532*	32	

** This number does not include garages, circulation or mechanical space.*

Conditions of Approval

1. *The applicant shall provide a signage and striping plan for on-site parking identifying which spaces belong to which unit. In addition, 3-4 of the on-site spaces shall be designated as guest parking spaces.*

The applicant has provided a signage & striping plan: see drawing C5.0. The “Program Areas” chart designates each unit’s parking space or spaces, and the location of the three (3) guest parking spaces.

2. *The applicant shall design the sidewalks and street landscaping on the east side of South Glenwood to Snow King Avenue to meet the guidelines for pedestrian frontages in the Community Streets Plan and as noted in this staff report. This includes a 5’ attached landscape strip with approved tree plantings properly spaced and 6’ detached sidewalk.*

The response to this condition has been grouped with the response to Condition #8. See below.

3. *The applicant shall either install a barrier/fence along the alley parking spaces OR shall revise the parking space dimensions so that they are at minimum 22 feet deep.*

After follow-up conversations with the Town, the applicant is showing 22’ foot deep spaces with a 2’ deep continuous vertical curb. This was requested in lieu of individual curb stops, which staff felt would get displaced over time by plows or cars.

Because PUDs allow flexible development standards and the approved Sketch Plan was conceptual in nature, the applicant is proposing a 22’ wide drive aisle as part of this Development Plan. The Engineer’s Report—see “2.0 Vehicle Access & Parking” and “Appendix III”—supports the legitimacy of this approach and illustrates that there is ample room for vehicular movement.

4. *At the time of Development Plan submittal the applicant shall provide a stamped landscape plan prepared by a licensed Wyoming landscape architect with 23 plant units and cost breakdown. The plan shall locate most of the landscaping in the front of the building but also incorporate planting along both the north and south setback areas.*

Please see drawing L1.1 which elaborates both the landscape scope and the cost breakdown.

5. *The applicant shall provide a Traffic Analysis and vehicle movement plan consistent with Engineering Department’s comments in the department reviews.*

This has been addressed in the Engineer’s Report through “2.0 Vehicle Access & Parking” and “Appendix III” (Exhibit A: Vehicle Turning Analysis and Exhibit B: Traffic Movements).

6. *The approval is subject to Section 7.4.2.D.13 Apartment Building Exemption. Upon future subdivision the applicant at that time will be subject to the currently adopted Workforce Housing regulations (7.4.2.D.13 will be repealed in its entirety), and subject to the Affordable Housing Regulations in place at the time of sketch plan submission.*

LDR 7.4.2.D.13. **Apartment Building.** An apartment building meeting the following standards is exempt from the standards of the Division.

A. The apartment building shall have 20 or more units.

Complies. The building has 20 units.

B. No apartment in the building shall exceed the maximum habitable floor area established below, except that a 10% adjustment may be approved.

- Studio: 450 sf

- 1 bedroom: 675 sf

- 2 bedroom: 975 sf

- 3 bedroom: 1,175 sf

- Each additional bedroom: 200 sf

Complies. The proposed units do not exceed the size requirement for each of the above thresholds.

C. By January 31 of each year following issuance of a certificate of occupancy of the building, the owner of the apartment building shall provide the Housing Director with a report containing demographic information required by the Town that can be legally obtained and shared by the owner, including but not limited to:

- Average rent charged by unit type,

- Average number of tenants by unit type, and

- Percentage of tenants employed in Teton County.

Complies. As conditioned, the applicant will be required to adhere to the above standards.

D. If any apartment in the building is approved for another use (e.g. condominiumization to attached single family use or approval of short-term rental use) this exemption shall be voided for the entire building. At the time of such approval, the standards of this Division shall be applied to all previously exempted units as though they were being newly developed.

Complies. As conditioned, the applicant will be required to adhere to the above standards.

E. This exemption shall expire May 15, 2022.

Complies. The applicant applied for this exemption prior to May 15, 2022.

The applicant acknowledges this condition of approval. The unit sizes are outlined within the "Program Areas" Chart and are in compliance with these values.

7. *The applicant shall revise the site plan and floor plan to provide pedestrian access from the parking/garage area to the northwestern most unit on the ground level.*

The applicant has revised Unit C101 to honor this request. Units A101 & B101 have also been adjusted to address a similar condition.

8. *The applicant shall pave the alley to the satisfaction of the Public Works department as stated in the department reviews.*

Please see drawing L1.1 which elaborates the landscape scope of this condition and drawing C1.1 which elaborates the sidewalk & alley portion of this scope.

We have met the Town's conditions for approval of Base Camp's rezoning and Sketch Plan proposals. However, we have concerns about two conditions: (1) the requirements that Base Camp build the entire sidewalk beyond the applicant's property all the way to Snow King Avenue, and (2) the requirement that Base Camp pave the entire alley beyond the applicant's property to Snow King Avenue.

In the spirit of being fair and equitable, there are significant portions of the proposed capital improvements that are not adjacent to the Base Camp property. Rough proportionality is the standard for what is customary when requesting capital improvements be made, and it appears that the requested work goes well beyond these established limits of fairness. As noted by Town

Staff, this represents a shift outside of common practice, in which improvements “were limited to the areas directly adjacent to the development’s property(s) and did not extend further.”

We have similar concerns regarding whether it is appropriate to have one landowner shoulder the entire cost of these major improvements, including portions adjacent to and directly benefiting property owned by other entities, such as Miller Ventures, L.P. and NewJack LLC. At the very least, the Town’s exaction should be proportional to the projected impact of Base Camp’s development. In the spirit of being fair and equitable, Base Camp is proposing that the Town consider requiring from each adjacent landowner a pro rata for the cost of the extended alley if/when they decide to develop their parcels with the Town, and that the Town be responsible for the actual alley paving project, but that Base Camp deposit its share of the paving now. For the sidewalk, Base Camp is happy to install the sidewalk across its land, and can deposit a bond with the Town to ensure that it is completed as part of the project.

Sidewalk:

Based on a cost estimate provided by our general contractor, the sidewalk paving scope is estimated to cost \$84,894, running the sidewalk all the way to Snow King, which again seems out of proportion with norms on developments. Base Camp is proposing that it should be responsible to install a sidewalk to the Town of Jackson’s engineering and municipal specifications across Base Camp property, based on the cost estimate that would be approximately a cost of \$47,367 (55.8%) of the total sidewalk improvements to get to Snow King, so a significant portion will be taken care of by Base Camp. Base Camp can also post a surety bond with the Town of Jackson in an appropriate amount, to ensure that the sidewalk installation is performed as part of the approved project. Once the sidewalk work is completed by Base Camp, and approved by the Town, the surety bond can be released back to Base Camp.

Alley:

Based on a cost estimate from the general contractor for Base Camp, the scope of the alley paving is estimated to cost \$49,536; based on frontage, we believe that Base Camp should be responsible for no more than \$13,174 (26.6%) of the alley improvements. We propose a payment to the Town of Jackson in the amount of \$13, 174, which will be noted in the development permit file, so that when the Town of Jackson is ready to pave the alley, or if other neighbors would like to pay to have the alley paved, Base Camp will have already paid for its share. Alternatively, Base Camp could be required to simply grade the alley after its work is completed to make sure that potholes and bumps are smoothed out.

9. *The applicant shall comply with all recommendations of the Design Review Committee.*

The applicant has incorporated all recorded comments from the Design Review Committee.

LDR Compliance

Requirements	Proposed	Compliance
FAR PUD-NM-2 25,136 sf gross site area x .65 = 16,338 sf	16,338 sf	Complies
LSR PUD-NM-2 25,136 sf gross site area x .30 = 7,541 sf	7,547 sf	Complies
Building Height PUD-NM-2 Max 35'-0"	35'-0" at highest point	Complies
Number of Floors Max 3 stories above grade	3 stories	Complies
Building Width Building width for PUD-ToJ zones shall be set on an individual, project-by- project basis.	157'-0"	Complies
Pedestrian Frontage	Varies; 14'-3" to 37'-6"	Complies
Setbacks Setbacks for PUD-ToJ zones shall be set on an individual, project-by-project basis. The numbers below indicate the recommended setbacks.	-	Complies
Primary Street 12'-0"	Varies; 14'-3" to 37'-6"	Complies
Side 5'-0"	11'-0" & 24'-6"	Complies
Rear 20'-0"	44'-6"	Complies
Parking Setback Parking standards for PUD-ToJ zones shall be set on an individual, project-by-project basis	-	Complies
Parking Parking standards for PUD-ToJ zones shall be set on an individual, project-by-project basis	32 spaces	Complies
Employee Housing Requirement Exempt	Workforce housing provided	Complies
Plant Units Landscaping requirement of 1 per du = 20 plant units Parking spaces 32/12 = 2.667 Total Plant Units Required = 23	23 plant units	Complies

Responses to Submittal Checklist

Permit Application	Included in submission
Letter of Authorization	Included in submission
Application Fees	Paid on submission
Review Fees	Will be paid when billed
Notice Fee	Will be paid when billed
Digital Submission	Will be submitted upon Sufficiency
Response to Submittal Checklist	Provided here
Narrative Description	See Project Description & Program
Proposed Development Program	See Project Description & Program
Findings for Approval	See Findings for Approval: Development Plan
Site Plan	See Exhibit A (C1.1)
Floor Plans	See Exhibit A (C1.1, A1.1, A1.2, A1.3, A1.4)
Neighborhood Meeting	Completed on 08/03/17
Posted Notice	Will be posted upon scheduling of public hearings
Structure Location & Mass	See LDR Compliance calculations and Exhibit A
Maximum Scale of Development	See LDR Compliance calculations and Exhibit A
Design Review	Site & building plans approved by DRC at Sketch Plan
Site Development	See Exhibit A (C1.1)
Landscaping	See Exhibit A (L1.1)
Fencing	No fencing proposed
Scenic Standards	All lighting will comply with regulations; not in SRO
Signs	See Exhibit A (C5.0)
GEC & Stormwater	See Exhibit B
Allowed Uses	Workforce Housing
Parking	See Project Description & Program, LDR Compliance calculations and Exhibit A (C5.0)

Employee Housing	Long Term Workforce Housing
Max Scale of Use	Housing complies
<u>Operational Standards</u>	
Outside Storage	See Exhibit A (C1.1) for bike storage attached to refuse & recycling enclosure
Refuse / Recycling	See Exhibit A (C1.1) for enclosed refuse & recycling enclosure location
Noise, Vibration, Electrical Disturbances, Fire / Explosive Hazards	Uses will comply with regulations
Allowed Subdivision / Development Options	PUD-NM-2
Residential Subdivision Requirements	Exempt per LDR Section 7.4.2.D.13
Infrastructure	Driveway enters off South Glenwood; Exits to the alley
Nonconformities	Not applicable
Open Space Standards	Not applicable

Findings for Approval: Development Plan

1. *Is consistent with the desired future character described for the site in the Jackson/Teton County Comprehensive Plan.*

The property is within Character District 3.2 within District 3: Town Residential Core. Below are descriptions of how the proposed development will meet each of the desired characteristics of the Comprehensive Plan.

- a. *Character*

From the Town's report in preparation for the December 17, 2018 Town Council Meeting: "As conditioned, staff finds that the proposed project improves implementation of the desired future character defined in the Illustration of Our Vision chapter of the Comprehensive Plan on all aspects. The Town Residential Core is envisioned to be comprised of a variety of housing types, because the existing housing trend tends to be single family, the proposed multi-family apartment project satisfies this vision in providing a different type of housing. In addition to variety in type, the vision also includes a variety in density. A 20-unit complex will provide one of the more dense developments within the immediate neighborhood thus satisfying the need for high density residential. Lastly, the proposed project is located near the core of Town close to employment, amenities and local transit which are all envisioned for the Town Residential Core."

- b. *Streetscape & Pedestrian*

All parking will be on site to the rear and within the lower level of the building. By placing the parking within the structure, and providing screening to the North and South of the site, its visual presence is minimized. The pedestrian experience is inviting with a landscape buffer, new sidewalk, and lush native vegetation within a generous front yard. The building will have large glazed openings and covered balconies to create transparency and activate the street front.

2. *Achieves the standards and objectives of the Natural Resource Overlay (NRO) and Scenic Resources Overlay (SRO), if applicable.*

Not applicable

3. *Does not have a significant impact on public facilities and services, including transportation, potable water and wastewater facilities, parks, schools, police, fire and EMS facilities.*

Does not have a significant impact on public facilities and services, including transportation, potable water and wastewater facilities, parks, schools, police, fire and EMS facilities. See the attached Engineering Report which shows that there is no significant impact on transportation, potable water or wastewater.

4. *Complies with the Town of Jackson Design Guidelines.*

Complies with the Town of Jackson Design Guidelines as outlined in the Town's document and as

elaborated by the Design Review Committee. The applicant will endeavor to address any additional comments the Committee may have.

5. *Complies with all relevant standards of these LDRs and other Town Ordinances as can be determined by the level of detail of a Development Plan.*

This application complies with all relevant standards of the LDRs and Town Ordinances as can be determined at this time: see the "LDR Compliance" and "Responses to Submittal Checklist" portions of this document for further elaboration.

6. *Is in substantial conformance with all standards or conditions of any prior applicable permits or approvals.*

This application is in substantial conformance with all prior submissions and approvals.



SOUTH GLENWOOD APARTMENTS

640-650 SOUTH GLENWOOD ST
JACKSON, WYOMING 83001

DEVELOPMENT PLAN SUBMISSION

DRAWING LIST

- G0.0 COVER SHEET
- G1.0 SITE LOCATION
- G1.1 SITE LOCATION, ZOOM
- C1.0 EXISTING SITE & DEMO PLAN
- C1.1 FINAL SITE PLAN
- C2.0 CONSTRUCTION STAGING & PHASING PLAN
- C3.0 UTILITY PLAN
- C3.1 UTILITY DETAILS
- C3.2 UTILITY DETAILS
- C3.3 UTILITY DETAILS
- C3.4 UTILITY DETAILS
- C4.0 GRADING PLAN
- C4.1 GRADING DETAILS
- C4.2 GRADING DETAILS
- C5.0 SIGN & STRIPING PLAN
- L1.1 LANDSCAPE PLAN
- A1.1 LEVEL 1 PLAN
- A1.2 LEVEL 2 PLAN
- A1.3 LEVEL 3 PLAN
- A1.4 ROOF PLAN
- A2.1 BUILDING ELEVATIONS
- A2.2 BUILDING ELEVATIONS
- A9.0 PERSPECTIVE VIEW
- A9.1 PERSPECTIVE VIEW
- A9.2 PERSPECTIVE VIEW

REGISTRATION



CLIENT
BASE CAMP LLC C/O COHEN & ASSOCIATES LLC
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ARCHITECT
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(307) 200-2210

MERGE ARCHITECTS INC
SOUTH GLENWOOD APARTMENTS
640-650 SOUTH GLENWOOD ST
JACKSON, WY 83001

03/15/19 DEVELOPMENT PLAN

THE CONTRACTOR IS RESPONSIBLE
FOR MATERIALS, DETAILS AND
ACCURACY, FOR ALL QUANTITIES AND
DIMENSIONS, FOR SELECTING
FABRICATION PROCESSES, FOR
TECHNIQUES OF ASSEMBLY, FOR
PERFORMING WORK IN A SAFE MANNER,
AND FOR COORDINATING WORK WITH
THAT OF ALL TRADES

JOB NO.: 17261

SCALE:

DATE: 03/15/19

DRAWING TITLE

COVER SHEET

SHEET NO.

G0.0



REGISTRATION



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MERGEARCHITECTS INC
SOUTH GLENWOOD APARTMENTS
640-650 SOUTH GLENWOOD ST
JACKSON, WY 83001

03/15/19 DEVELOPMENT PLAN

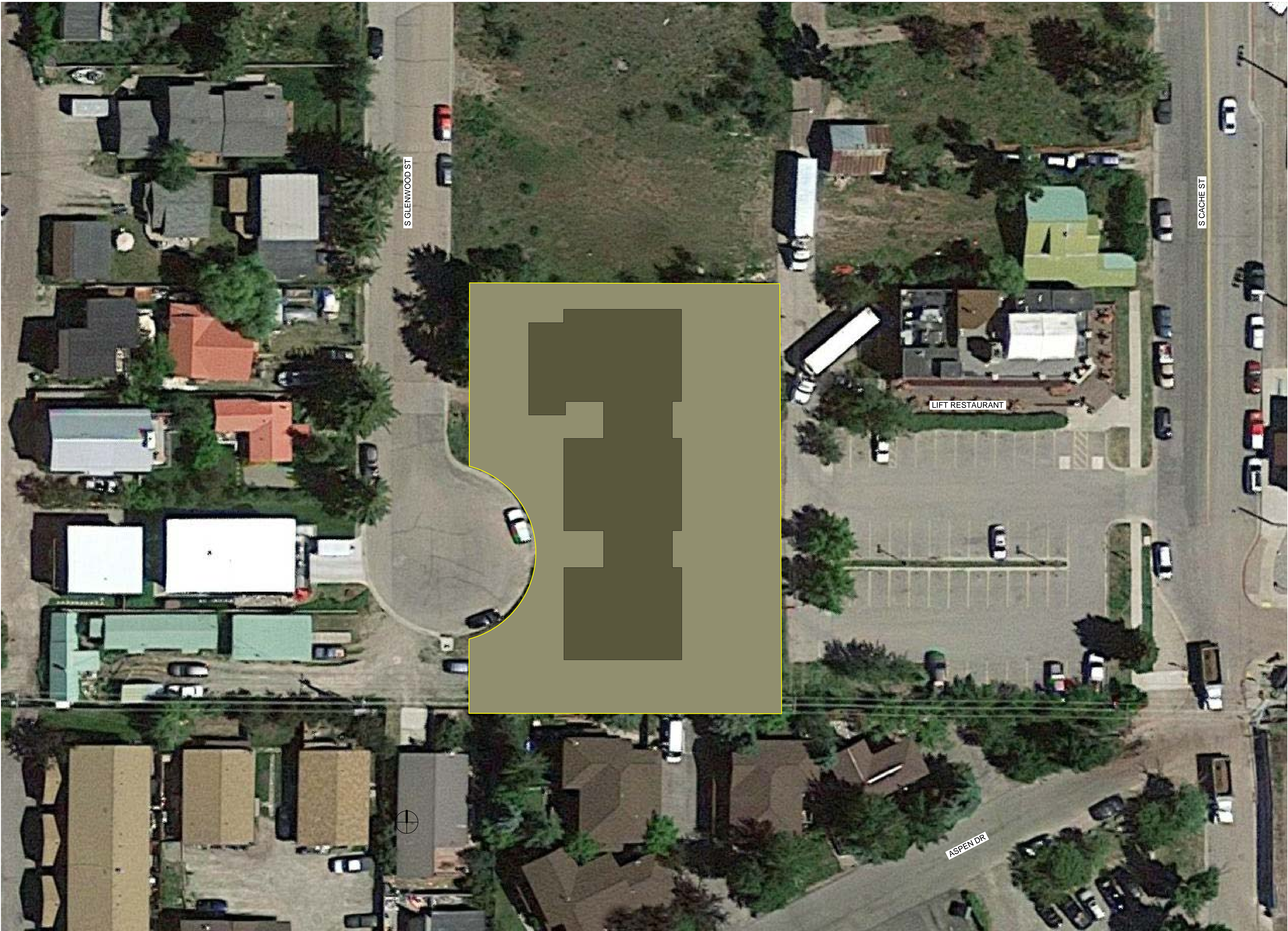
THE CONTRACTOR IS RESPONSIBLE FOR MATERIALS, DETAILS AND ACCURACY, FOR ALL QUANTITIES AND DIMENSIONS, FOR SELECTING FABRICATION PROCESSES, FOR TECHNIQUES OF ASSEMBLY, FOR PERFORMING WORK IN A SAFE MANNER, AND FOR COORDINATING WORK WITH THAT OF ALL TRADES

JOB NO.: 17261
SCALE: 1" = 50'-0"
DATE: 03/15/19

DRAWING TITLE
SITE LOCATION

SHEET NO.

G1.0



REGISTRATION



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03/15/19 DEVELOPMENT PLAN

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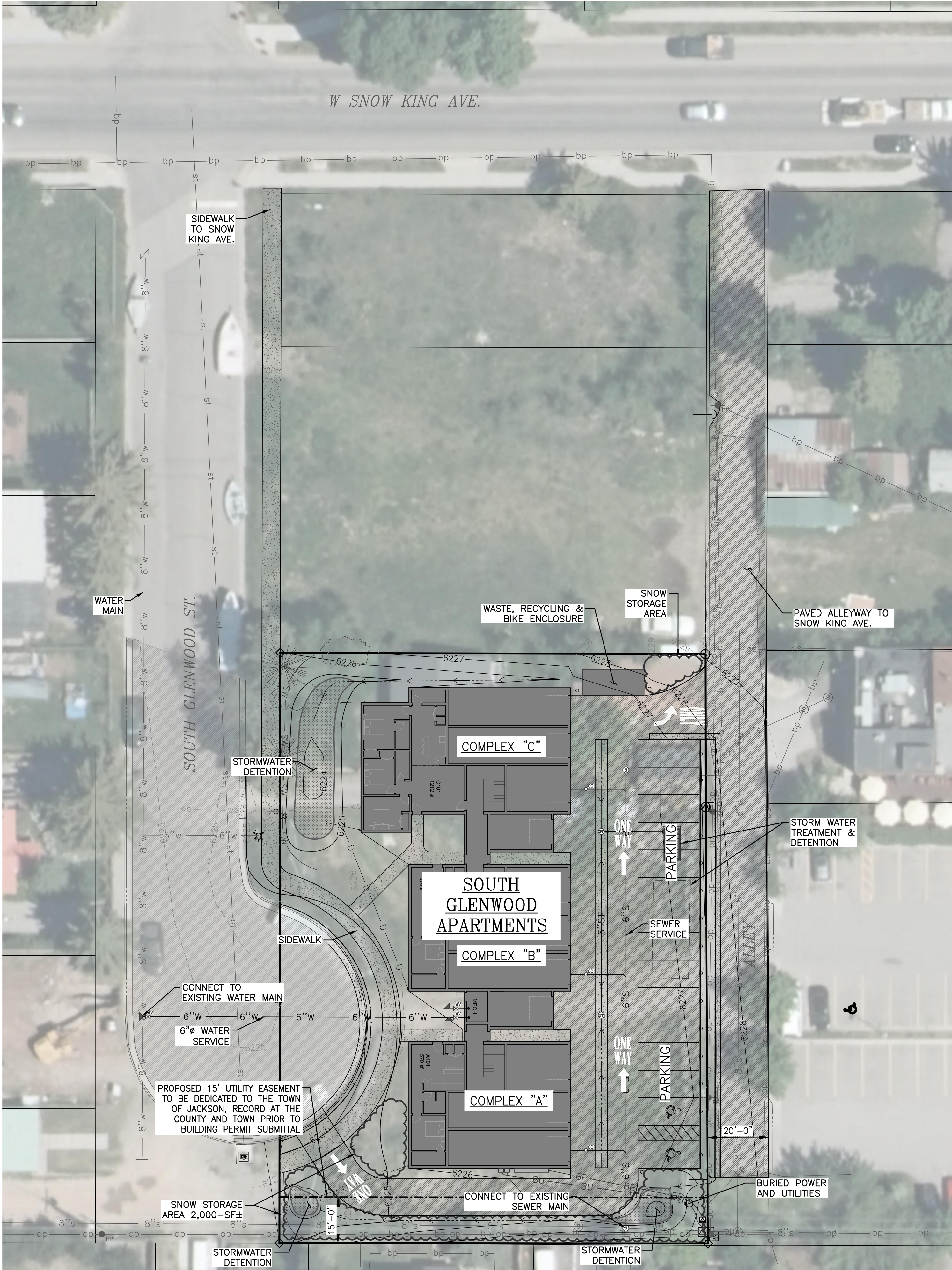
JOB NO.: 17261
SCALE: 1" = 20'-0"
DATE: 03/15/19

DRAWING TITLE
SITE LOCATION, ZOOM

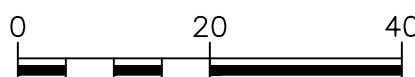
SHEET NO.

G1.1

S:\Projects\2017\296-02 640-650 Glenwood Pub 17P14 Drawings\GLENWOOD PUB - FINAL SITE AND STRIPPING PLAN.dwg PLOTED BY: klpatri@cl... DATE: 12/13/2017 12:08:44 PM



FINAL SITE PLAN
SCALE: 1" = 20' (24X36)



GENERAL CONSTRUCTION NOTES:

- CAUTION:** UNDERGROUND UTILITY LOCATIONS ARE NOT GUARANTEED, NOR IS THERE ANY GUARANTEE THAT ALL EXISTING UTILITIES (WHETHER FUNCTIONAL OR ABANDONED) WITHIN THE PROJECT AREA ARE SHOWN ON THESE CONSTRUCTION DRAWINGS. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL UNDERGROUND UTILITIES BEFORE STARTING WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGE RESULTING FROM CONTRACTORS WORK.
1. ENCROACHMENT PERMIT MUST BE SUBMITTED TO TOWN OF JACKSON PRIOR TO ANY WORK IN PUBLIC (TOWN) STREET RIGHT-OF-WAYS.
 2. ALL BEDDING AND BACKFILL WITHIN THE TOWN OF JACKSON RIGHT-OF-WAY MUST MEET TOJ SPECIFICATIONS AND STANDARD DETAILS. COMPACTION OF BACKFILL SHALL BE COMPLETED WITH A BACKHOE MOUNTED HOE PACK, OR JUMPING JACK COMPACTOR.
 3. CONTRACTOR SHALL COMPLY WITH REQUIREMENTS OF THE APPROVED CONSTRUCTION MANAGEMENT PLAN, BUILDING PERMIT, AND DEMOLITION AND ENCROACHMENT PERMITS ISSUED BY THE TOWN OF JACKSON.
 4. INSTALL CONSTRUCTION FENCING IN ORDER TO CONFINE WORK WITHIN AFFECTED LOTS. COMPLY WITH SHEET C2.0.
 5. THERE ARE SEVERAL OVERHEAD POWER LINES ONSITE. CONTRACTOR SHALL PROVIDE A SPOTTER WHEN COMPLETING WORK BENEATH OR NEAR POWER LINES AND MAINTAIN 10-FT (MINIMUM) VERTICAL CLEARANCE FROM OVERHEAD TRANSMISSION PHASES AND WORKING EQUIPMENT.

LEGEND
(DESIGN)

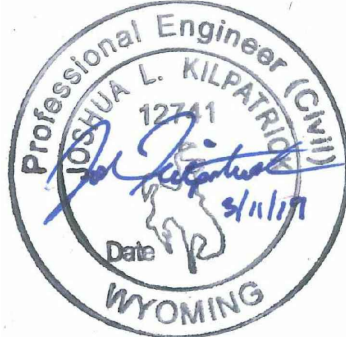
6225	INDEX CONTOUR
6226	MINOR CONTOUR
6"W	6" DIP WATER SERVICE (FIRE)
4"W	4" DIP WATER SERVICE (DOMESTIC)
6"S	6" SEWER
4"S	4" SEWER SERVICE
8"ST	8" STORM SEWER
4"ST	4" STORM SEWER
BU	BURIED UTILITIES
BP	BURIED POWER
LD	LIMITS OF DISTURBANCE
Flowline	FLOWLINE DITCH/SWALE
SF	SILT FENCE
SW	STRAW WATTLE
Replacement	REPLACEMENT CONCRETE/ASPHALT PAVEMENT
WV	WATER VALVE
CS	CURB STOP
S	SEWER MANHOLE
CO	CLEANOUT
ST	STORM SEWER MANHOLE
Transformer	POWER TRANSFORMER

DEVELOPMENT PLAN
NOT FOR CONSTRUCTION

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MERGE ARCHITECTS INC
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640-650 SOUTH GLENWOOD ST
JACKSON, WY 83001

REGISTRATION



CLIENT

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03/13/19 DEVELOPMENT PLAN

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JOB NO.: A/E: 17261 / 17-296-02

SCALE: AS INDICATED

DATE: 3/13/19

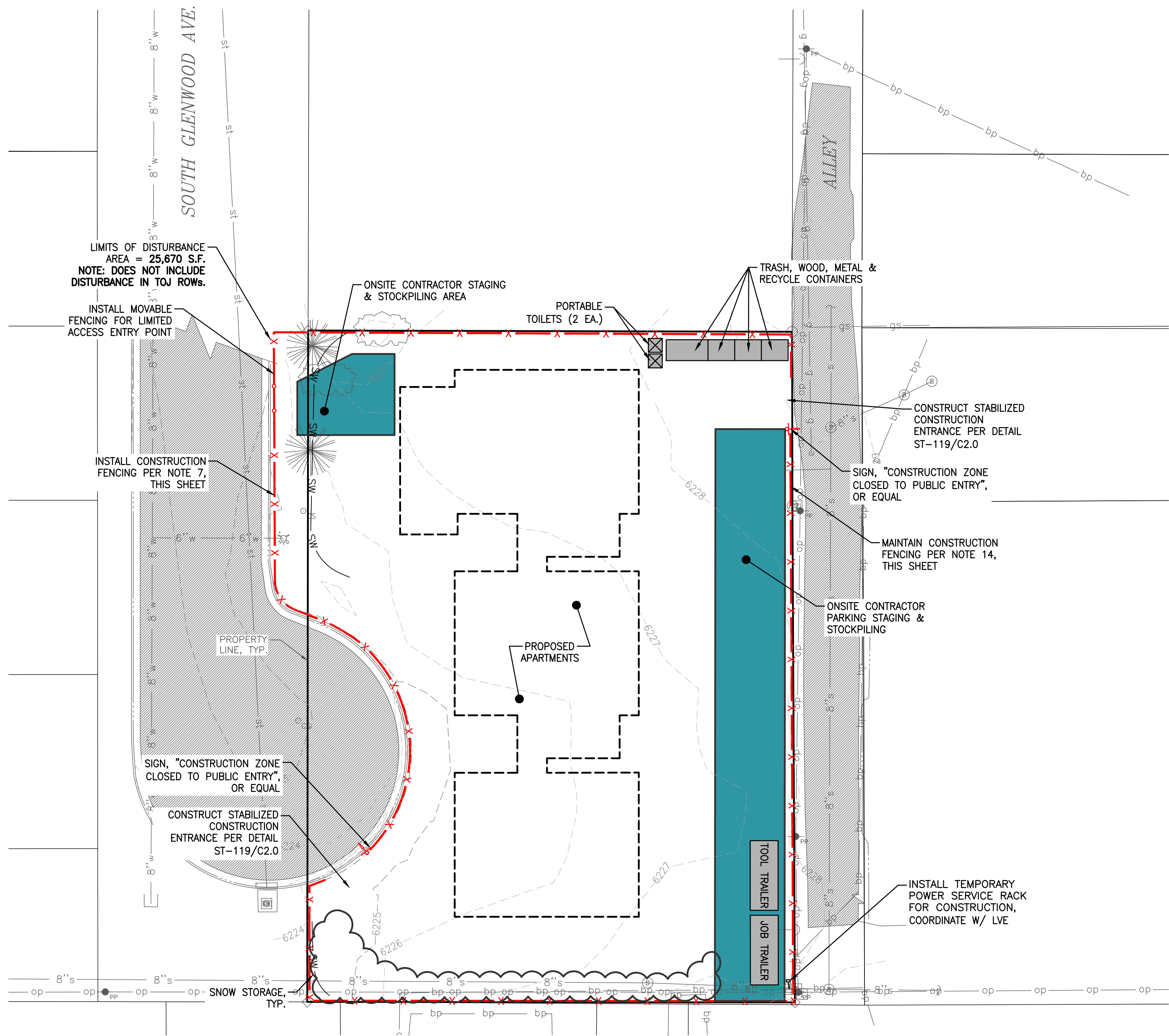
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FINAL SITE PLAN

SHEET NO.

C1.1

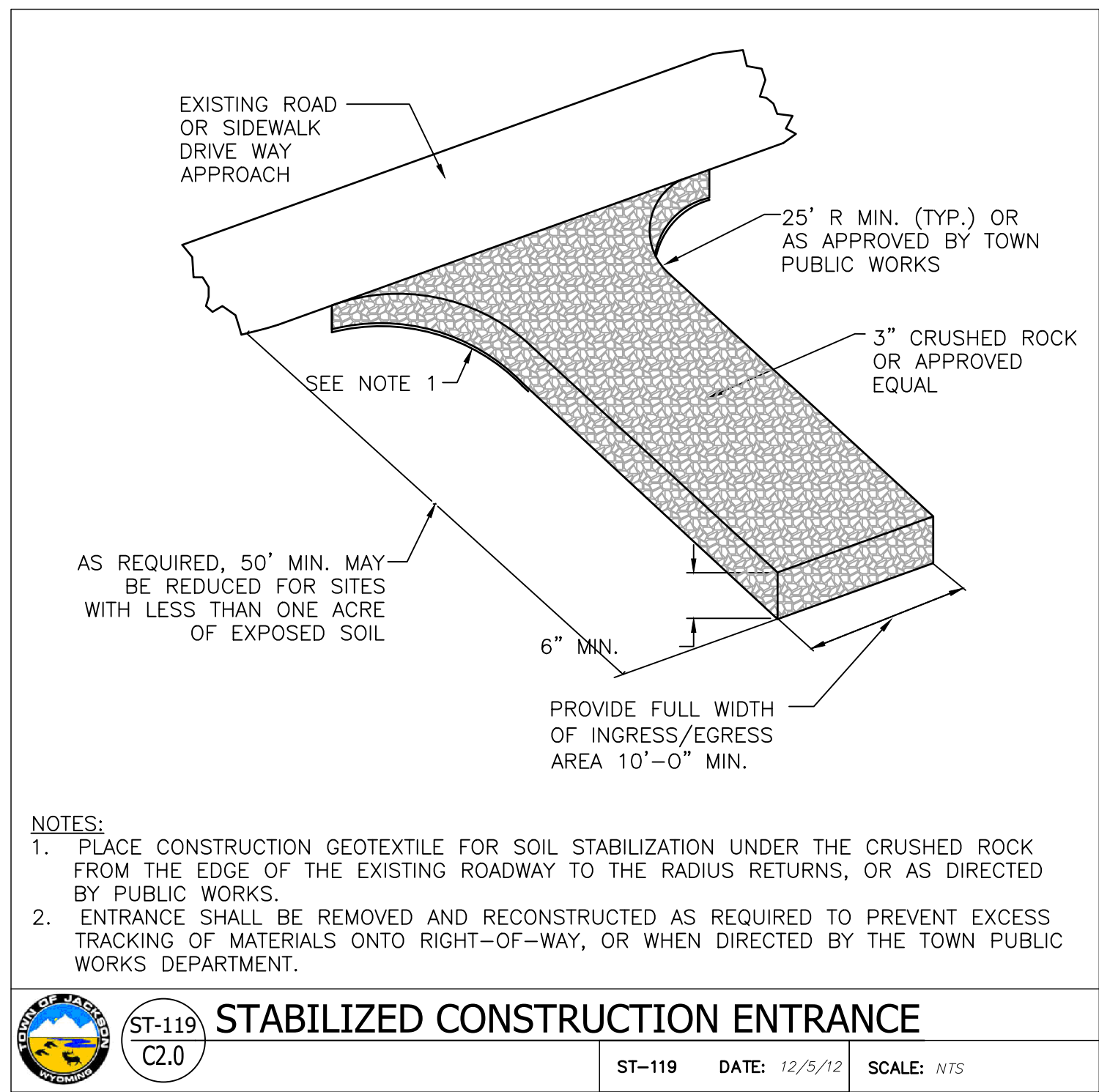
S:\P\2017\296-02 640-650 Glenwood PUB TYPN4 Drawings\CONSTRUCTION PLAN - CWP.dwg (C2.0 - CONSTRUCTION MANAGEMENT PLAN) - CWP.dwg, 12/19/2019 12:39:50 pm PLOTTED BY: adpatrik DWG FORMAT: E20



CONSTRUCTION MANAGEMENT NOTES

- CONTRACTOR SHALL COMPLY WITH REQUIREMENTS OF THE APPROVED CONSTRUCTION MANAGEMENT PLAN, AND DEMOLITION AND ENCROACHMENT PERMITS ISSUED BY THE TOWN OF JACKSON.
- PRIOR TO ISSUANCE OF DEMOLITION OR ENCROACHMENT (ROW) PERMITS FOR THIS PROJECT, THE CONTRACTOR IS REQUIRED TO CONTACT ALL ADJACENT PROPERTY OWNERS AND BUSINESSES ADJACENT TO NOTIFY THEM OF THE PROJECT AND OBTAIN CONTACT INFORMATION TO ALLOW FOR FUTURE COMMUNICATIONS REGARDING THE PROJECT AND CONSTRUCTION ACTIVITY IN THE AREA.
- PRIOR TO ANY CONSTRUCTION, CONTRACTOR SHALL BOND ALL WORK W/ THE TOWN OF JACKSON.
- PRIOR TO ANY CONSTRUCTION, THE CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH TOJ.
- ENCROACHMENT PERMIT APPLICATION MUST BE SUBMITTED TO TOWN OF JACKSON FOR ANY WORK TAKING PLACE WITHIN TOJ STREET RIGHT-OF-WAYS (ROW). WORK WITHIN THE ROW SHALL NOT COMMENCE UNTIL A PERMIT HAS BEEN ISSUED BY THE TOWN. WORK IN THE ROW IS LIMITED TO APRIL 15TH THROUGH OCTOBER 15TH, 7AM TO 7PM. COORDINATE SAFETY, FENCING, SIGNAGE AND BARRICADE REQUIREMENTS WITH TOJ PRIOR TO CONSTRUCTION W/IN STREET ROWs.
- CONSTRUCTION WORKER PARKING: PARKING SHALL BE PROVIDED WITHIN CONTRACTOR STAGING AREAS.
- INSTALL PLASTIC CONSTRUCTION FENCING AS INDICATED IN PLAN.
 - CONSTRUCTION FENCING, SHOWN IN RED, SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION TO PROTECT THE PUBLIC FROM CONSTRUCTION OPERATIONS.
 - WHERE REQUIRED, CONTRACTOR SHALL MOVE FENCING AND BARRICADES OUTSIDE THE PROPERTY BOUNDARY TO PROTECT THE PUBLIC DURING STREET AND UTILITY IMPROVEMENTS.
 - CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING SNOW CLEAR FROM THE CONSTRUCTION FENCE ALONG GLENWOOD ST. AND THE ADJACENT ALLEY.
 - FENCING SHALL NOT PROTRUDE INTO SIDEWALKS WHERE IT CAN POSE A TRIPPING HAZARD OR IMPEDE SNOW REMOVAL OPERATIONS.
- COMPLETE DUST CONTROL VIA. WATERING STOCKPILES AND OPEN GRAVEL AREAS.
- CONTRACTOR SHALL PREVENT TRACKING OF SOIL ONTO PUBLIC ROADS. ROADWAYS SHALL BE MONITORED AND CLEANED BY THE CONTRACTOR WHEN NECESSARY.
- TRASH & RECYCLING CONTAINERS: CONTRACTOR SHALL PROVIDE TRASH AND RECYCLING CONTAINERS FOR SEPARATION OF WASTES.
 - CONTAINERS SHALL PROVIDE COVERS TO PREVENT ANIMAL ENTRY.
 - CONTRACTOR SHALL SCHEDULE REGULAR TRASH AND RECYCLING REMOVAL. OVERFLOW OF CONTAINERS WILL NOT BE ALLOWED.
- CONTRACTOR SHALL MAINTAIN ACCESS TO EXISTING FIRE HYDRANTS INCLUDING PROVIDING A MINIMUM CLEARANCE DISTANCES, AS WELL AS, PROVIDING SNOW REMOVAL. NOTIFY THE FIRE DEPT. OF ANY HYDRANTS SHIELDED BY CONSTRUCTION AND PROVIDE HYDRANT LOCATION SIGNAGE.
- COMPLY WITH THE FOLLOWING REGARDING CONSTRUCTION TRAFFIC:
 - LOADING AND OFFLOADING OF MATERIALS SHALL TAKE PLACE W/IN CONTRACTOR STAGING AREAS SHOWN IN PLAN, OR OTHERWISE COORDINATED WITH THE TOWN WHEN TAKING PLACE W/IN PUBLIC ROWs AND ALLEYS.
 - CONTRACTOR SHALL NOTIFY NEIGHBORING PROPERTY OWNERS AND BUSINESSES AFFECTED BY CONSTRUCTION TRAFFIC.
- COORDINATE TEMPORARY UTILITY REQUIREMENTS (POWER, WATER, SEWER, ETC.) FOR CONSTRUCTION WITH UTILITY PROVIDERS.
- STRIPPED MATERIAL SHALL BE STOCKPILED AT STOCKPILE AREAS SHOWN ON PLAN, CUT MATERIAL WILL BE PLACED DIRECTLY INTO FILL AREAS, STOCKPILED OR HAULED OFFSITE.
- CONTRACTOR SHALL INSTALL EROSION CONTROL DEVICES PRIOR TO CONSTRUCTION AND MAINTAIN THEM THROUGHOUT. MITIGATE OFFSITE MIGRATION OF STORM WATER AND SEDIMENT TO ADJACENT PROPERTIES BY CONSTRUCTION OF TEMPORARY DETENTION BASINS AND INSTALLING SILT FENCE. OR STRAW WATTLES.

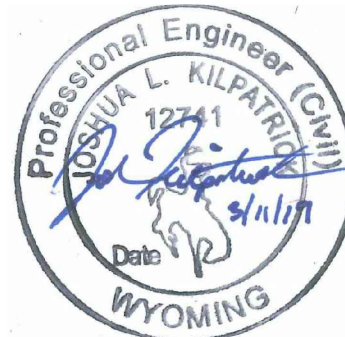
PRELIMINARY CONSTRUCTION SCHEDULE		
No:	MILESTONES:	DATE(S):
1	START CONSTRUCTION	FALL 2019
2	PROJECT COMPLETION	FALL 2021



DEVELOPMENT PLAN
NOT FOR CONSTRUCTION

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Jackson 307.733.2087 | Buffalo 307.684.7029

REGISTRATION



CLIENT

BASE CAMP LLC c/o COHEN & ASSOCIATES LLC
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203.227.2390

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03/13/19 DEVELOPMENT PLAN

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JOB NO.: A/E: 17261 / 17-296-02

SCALE: AS INDICATED

DATE: 3/13/19

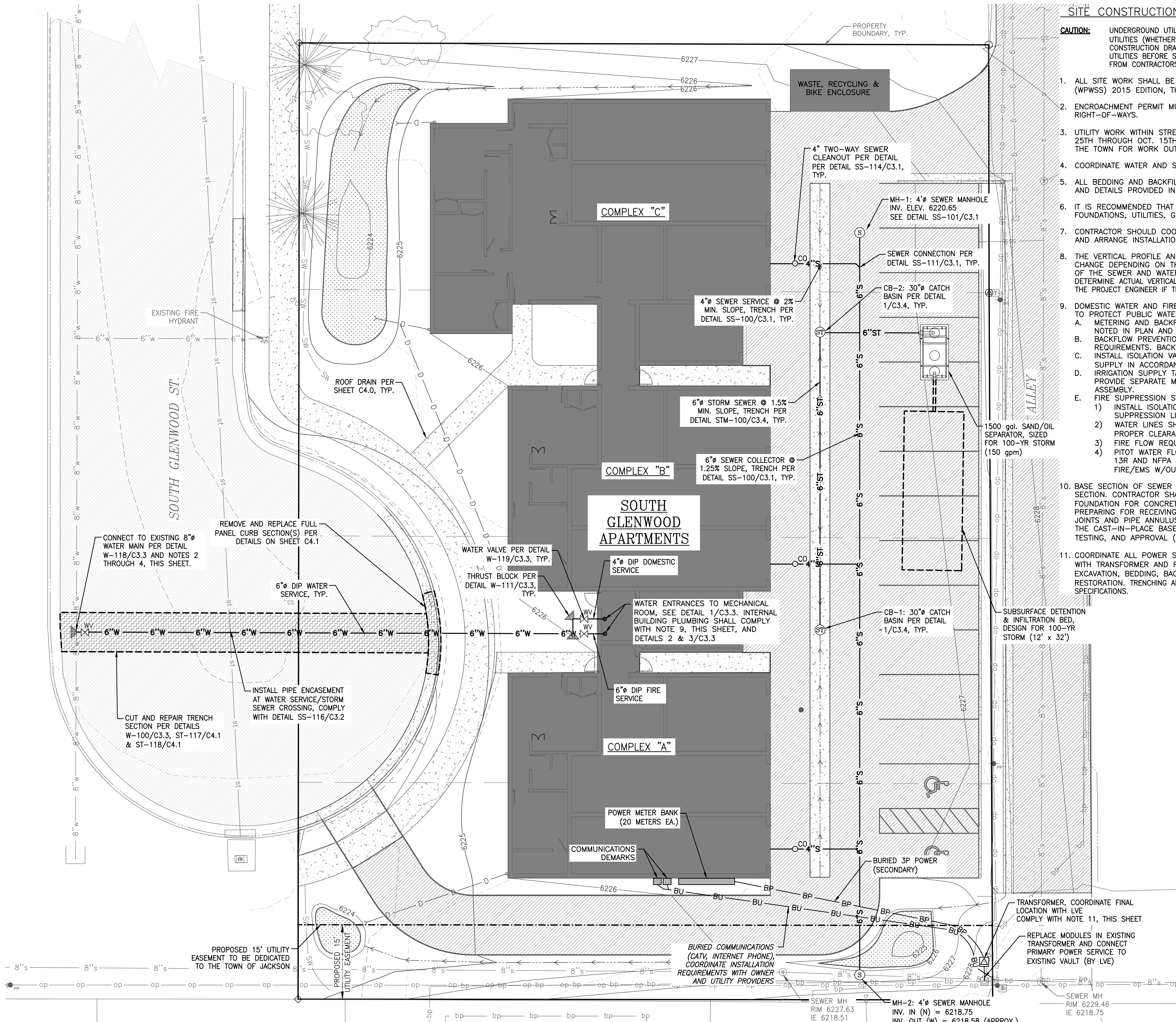
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CONSTRUCTION
STAGING & PHASING
PLAN

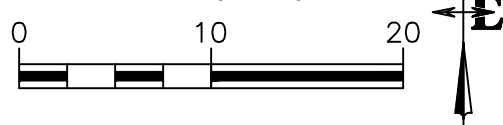
SHEET NO.

C2.0

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UTILITY PLAN
SCALE: 1" = 10' (24X36)



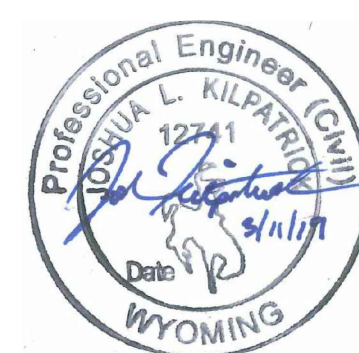
SITE CONSTRUCTION NOTES & SPECIFICATIONS

- CAUTION:** UNDERGROUND UTILITY LOCATIONS ARE NOT GUARANTEED, NOR IS THERE ANY GUARANTEE THAT ALL EXISTING UTILITIES (WHETHER FUNCTIONAL OR ABANDONED) WITHIN THE PROJECT AREA ARE SHOWN ON THESE CONSTRUCTION DRAWINGS. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL UNDERGROUND UTILITIES BEFORE STARTING WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGE RESULTING FROM CONTRACTORS WORK.
- ALL SITE WORK SHALL BE DONE IN ACCORDANCE WITH WYOMING PUBLIC WORKS STANDARD SPECIFICATIONS (WPWSS) 2015 EDITION, THE TOWN OF JACKSON STANDARDS, THESE PLANS AND UTILITY PROVIDERS.
 - ENCROACHMENT PERMIT MUST BE SUBMITTED TO TOWN OF JACKSON PRIOR TO ANY WORK IN STREET RIGHT-OF-WAYS.
 - UTILITY WORK WITHIN STREETS SHALL BE LIMITED TO APRIL 15TH THROUGH JUNE 15TH, AND/OR SEPT. 25TH THROUGH OCT. 15TH PER TOJ MUNICIPAL CODE 12.08.040. CONTRACTOR MAY SEEK APPROVAL FORM THE TOWN FOR WORK OUTSIDE THESE DATES.
 - COORDINATE WATER AND SEWER UTILITY WORK WITH THE TOWN OF JACKSON PUBLIC WORKS.
 - ALL BEDDING AND BACKFILL WITHIN THE TOWN OF JACKSON RIGHT-OF-WAY MUST MEET TOJ SPECIFICATIONS AND DETAILS PROVIDED IN THIS PLAN.
 - IT IS RECOMMENDED THAT THE CONTRACTOR EMPLOY A SURVEYOR TO PROVIDE STAKING FOR LOCATIONS OF FOUNDATIONS, UTILITIES, GRADING AND PARKING.
 - CONTRACTOR SHOULD COORDINATE THE INSTALLATION OF WIRE UTILITY SERVICES WITH UTILITY PROVIDERS AND ARRANGE INSTALLATION AND SERVICE CONTRACTS.
 - THE VERTICAL PROFILE AND HORIZONTAL ALIGNMENT OF THE PROPOSED SEWER AND WATERLINES MAY CHANGE DEPENDING ON THE LOCATION OF EXISTING WATER AND SEWER UTILITIES. PRIOR TO CONSTRUCTION OF THE SEWER AND WATER LINE SERVICES, CONTRACTOR SHALL UTILIZE EXPLORATORY EXCAVATION TO DETERMINE ACTUAL VERTICAL AND HORIZONTAL LOCATION OF EXISTING UTILITIES. CONTRACTOR SHALL CONSULT WITH THE PROJECT ENGINEER IF THERE ARE ANY VERTICAL CONFLICTS.
 - DOMESTIC WATER AND FIRE SYSTEM PLUMBING SHALL BE COMPLETED BY A LICENSED PLUMBER. IN ORDER TO PROTECT PUBLIC WATER SUPPLY, PLUMBING CONTRACTOR SHALL COMPLY WITH THE FOLLOWING:
 - METERING AND BACKFLOW DEVICES SHALL BE LOCATED WITHIN BUILDING MECHANICAL SPACES AS NOTED IN PLAN AND REQUIRED BY TOJ.
 - BACKFLOW PREVENTION DEVICES SHALL CONFORM TO AWWA MANUAL OF PRACTICE M-14 REQUIREMENTS. BACKFLOW DEVICES SHALL BE TESTED BY A THIRD-PARTY CERTIFIED TESTER.
 - INSTALL ISOLATION VALVES, DOUBLE CHECK BACKFLOW ASSEMBLY AND METER ON DOMESTIC WATER SUPPLY IN ACCORDANCE WITH DETAIL W-113/C3.3.
 - IRRIGATION SUPPLY TAKE-OFFS SHALL BE LOCATED UPSTREAM OF THE DOMESTIC WATER METER AND PROVIDE SEPARATE METER, ISOLATION VALVES AND REDUCED PRESSURE PRINCIPLE BACKFLOW ASSEMBLY.
 - FIRE SUPPRESSION SYSTEM REQUIREMENTS:
 - INSTALL ISOLATION VALVE AND REDUCED PRESSURE PRINCIPLE BACKFLOW ASSEMBLY ON FIRE SUPPRESSION LINES.
 - WATER LINES SHALL BE INSTALLED IN ACCORDANCE TO NFPA 13 AND NFPA 24 TO PROVIDE PROPER CLEARANCES, SEISMIC REQUIREMENTS, FLUSHING AND HYDRO TESTING. (IFC 901.4.1)
 - FIRE FLOW REQUIREMENTS SHALL MEET APPENDIX B OF THE INTERNATIONAL FIRE CODE (IFC).
 - PITOT WATER FLOW-TEST IS REQUIRED ON ALL NEW FIRE SPRINKLER INSTALLATIONS FOR NFPA 13R AND NFPA 13 SYSTEMS. SYSTEM PLANS WILL NOT BE APPROVED BY TETON COUNTY FIRE/EMS W/OUT A CERTIFIED TEST. (NFPA 291)
 - BASE SECTION OF SEWER MANHOLE SHALL BE CONSTRUCTED BY UTILIZING A CAST-IN-PLACE BASE SECTION. CONTRACTOR SHALL EXCAVATE BELOW THE EXISTING SEWER MAIN FOR PREPARATION OF SUITABLE FOUNDATION FOR CONCRETE PLACEMENT; POUR BASE INCLUDING FORMING 6" W. CHANNEL (NORTH) AND PREPARING FOR RECEIVING MANHOLE SECTION; PLACE DOG-HOUSE MANHOLE SECTION; AND GROUT SECTION JOINTS AND PIPE ANNULUSES. CONTRACTOR SHALL CUT AND REMOVE THE EXISTING SEWER MAIN WITHIN THE CAST-IN-PLACE BASE SECTION FOLLOWING CONSTRUCTION OF THE NEW SEWER COLLECTION SYSTEM, TESTING, AND APPROVAL (BY TOJ).
 - COORDINATE ALL POWER SERVICE WORK WITH LOWER VALLEY ENERGY (LVE). CONTRACTOR SHALL ASSIST LVE WITH TRANSFORMER AND POWER SERVICE INSTALLATION, INCLUDING, FURNISHING AND/OR INSTALLING ALL EXCAVATION, BEDDING, BACKFILL, CONCRETE TRANSFORMER PAD (VERIFY IF REQ'D BY LVE), AND SURFACE RESTORATION, TRENCHING AND BACKFILL REQUIREMENTS SHALL COMPLY WITH DETAIL 1/C3.1 AND THE PROJECT SPECIFICATIONS.

DEVELOPMENT PLAN
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SCALE: AS INDICATED

DATE: 3/13/19

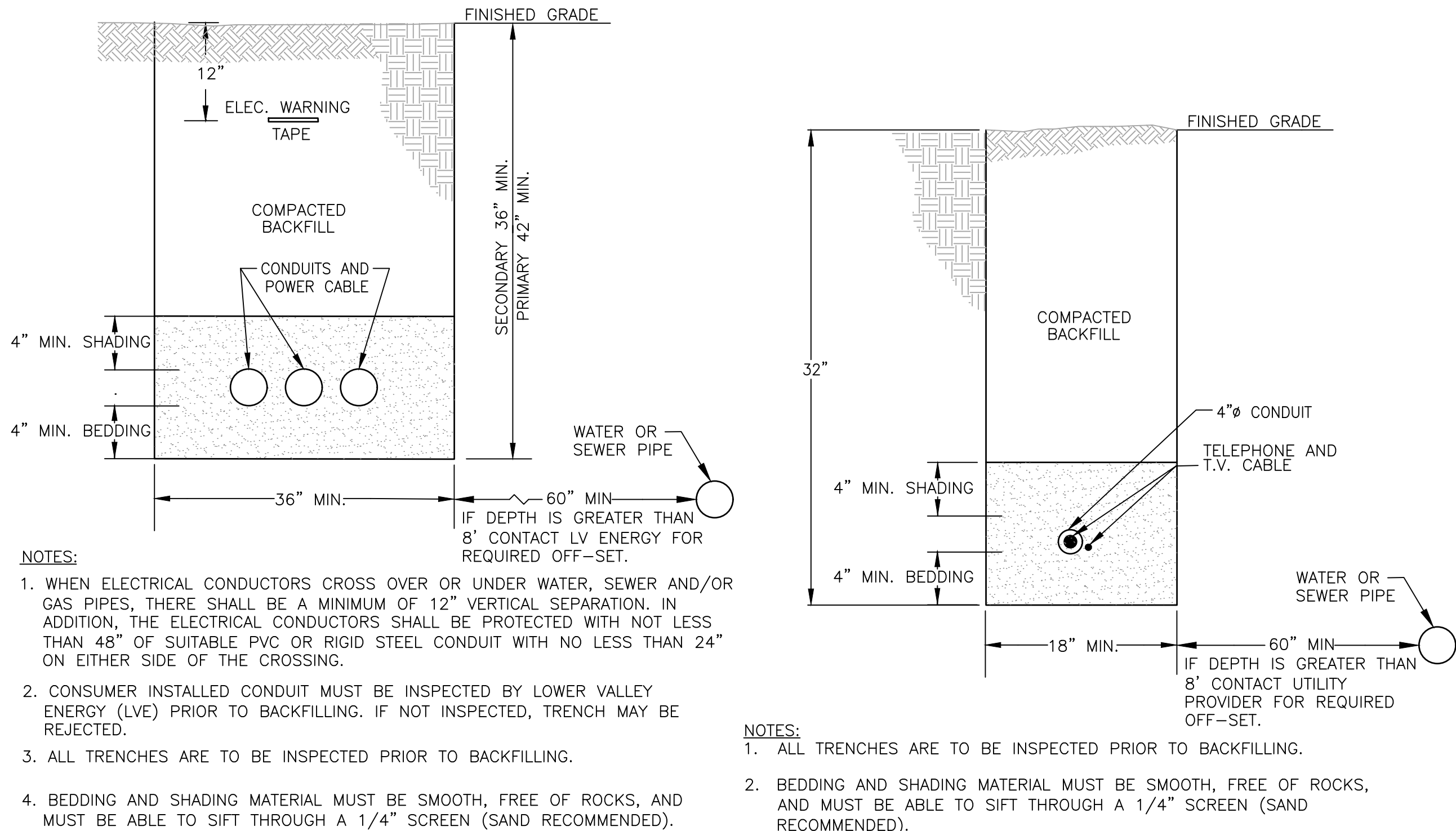
DRAWING TITLE

UTILITY PLAN

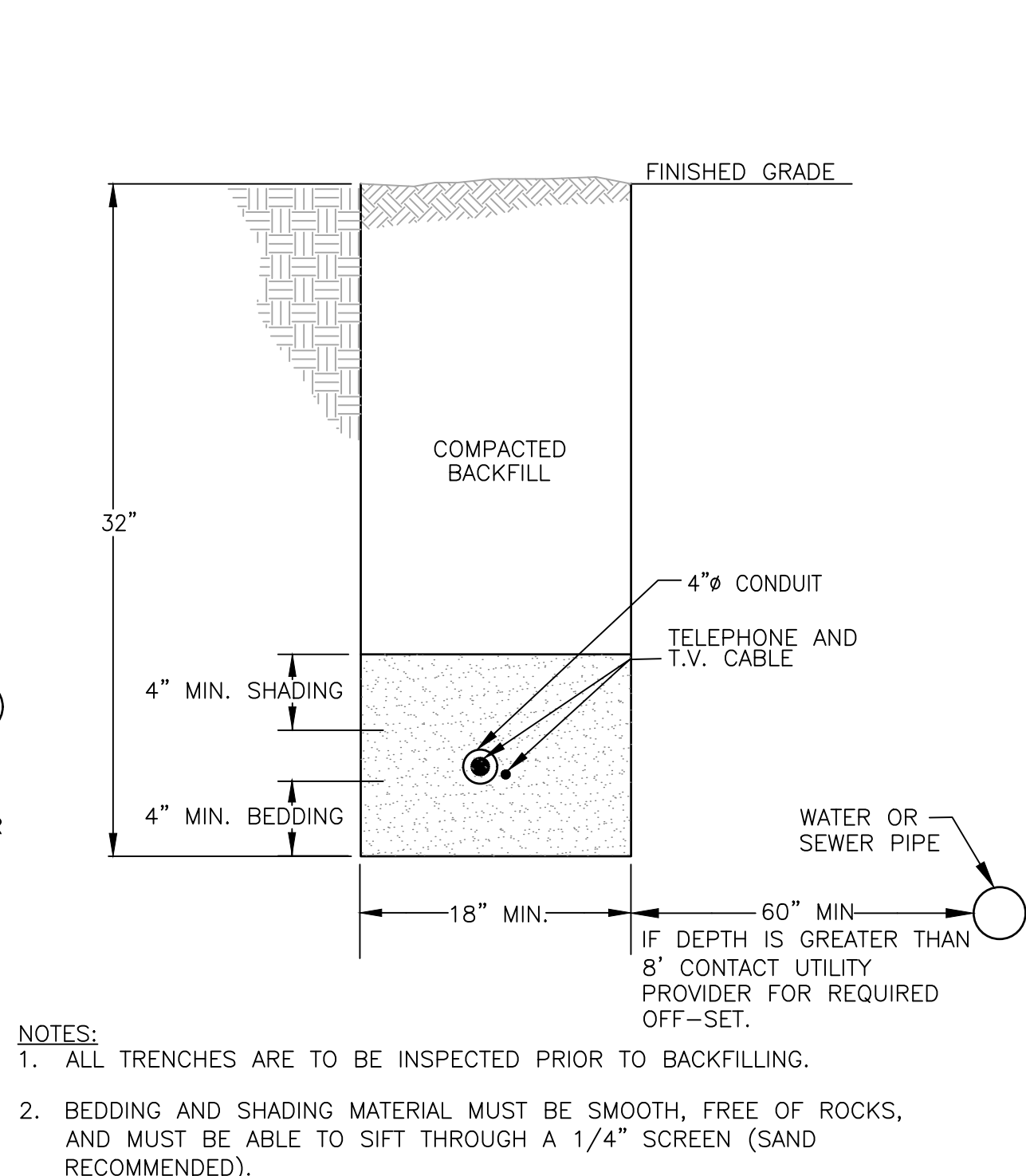
SHEET NO.

C3.0

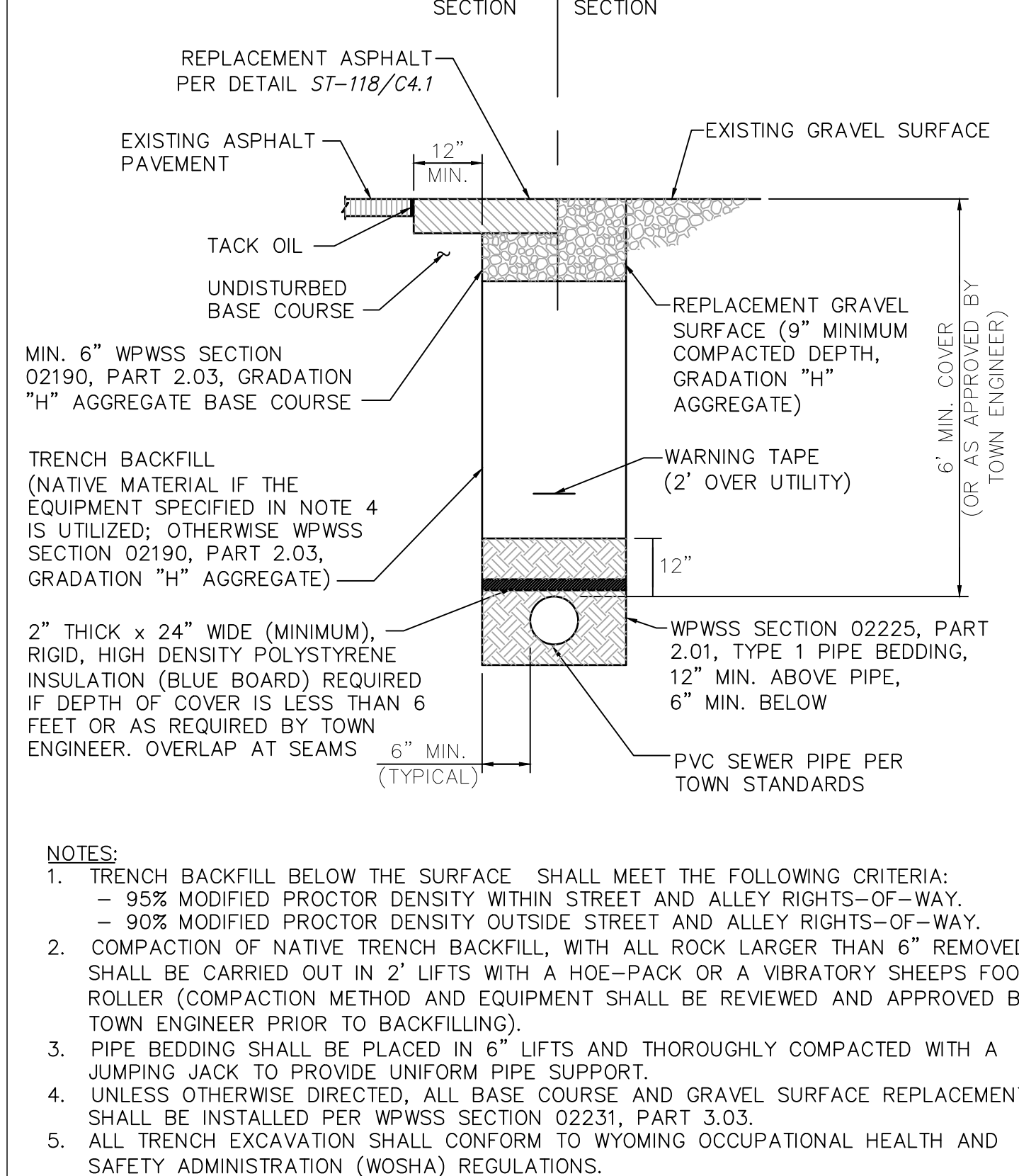
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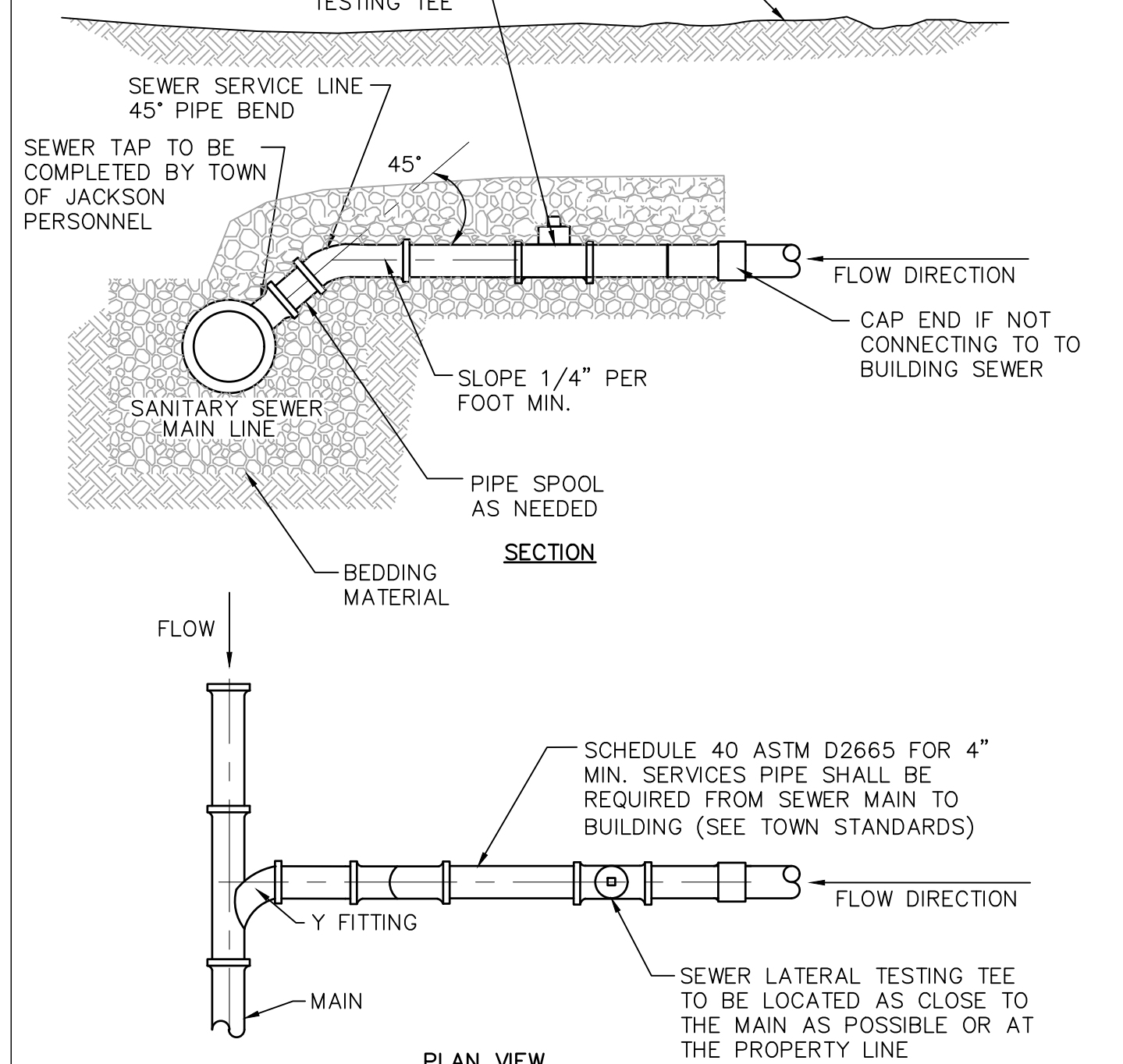
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C3.1
ELECTRIC TRENCH DETAIL
SCALE: NTS



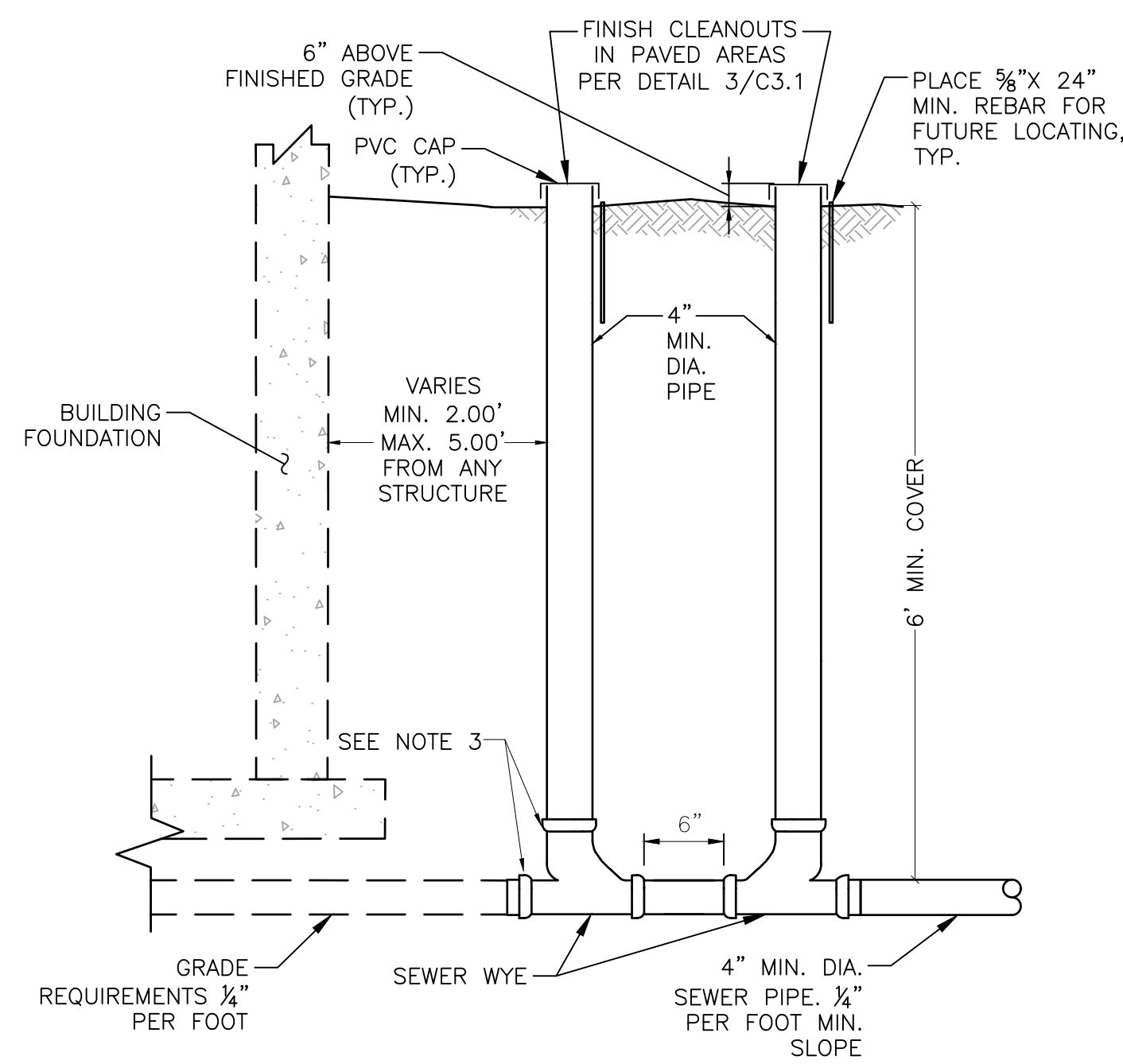
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C3.1
TELEPHONE, INTERNET & T.V CABLE TRENCH DETAIL
SCALE: NTS



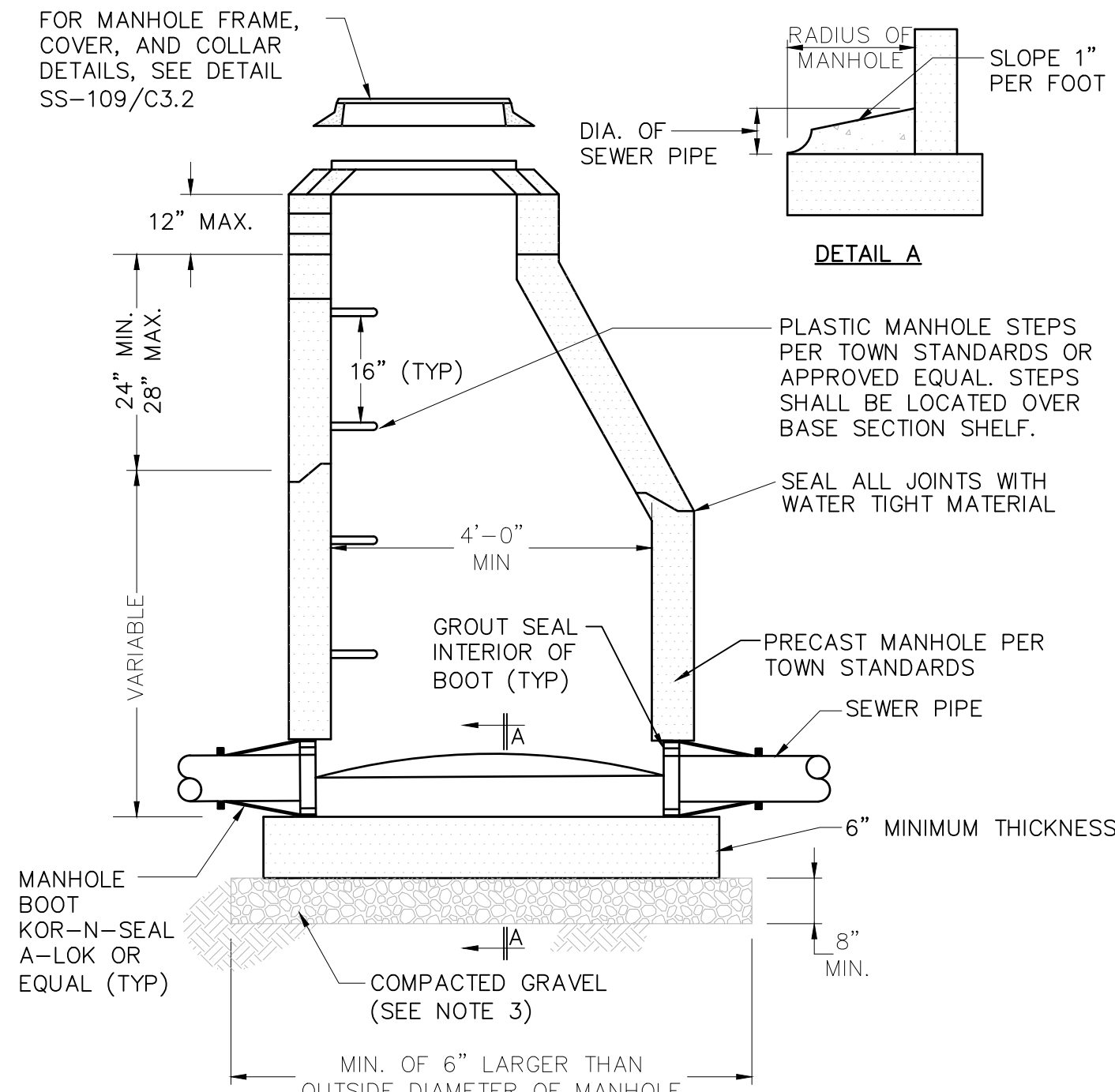
SS-100
C3.1
SEWER MAIN & SERVICE TRENCH DETAIL
DATE: 1/10/13
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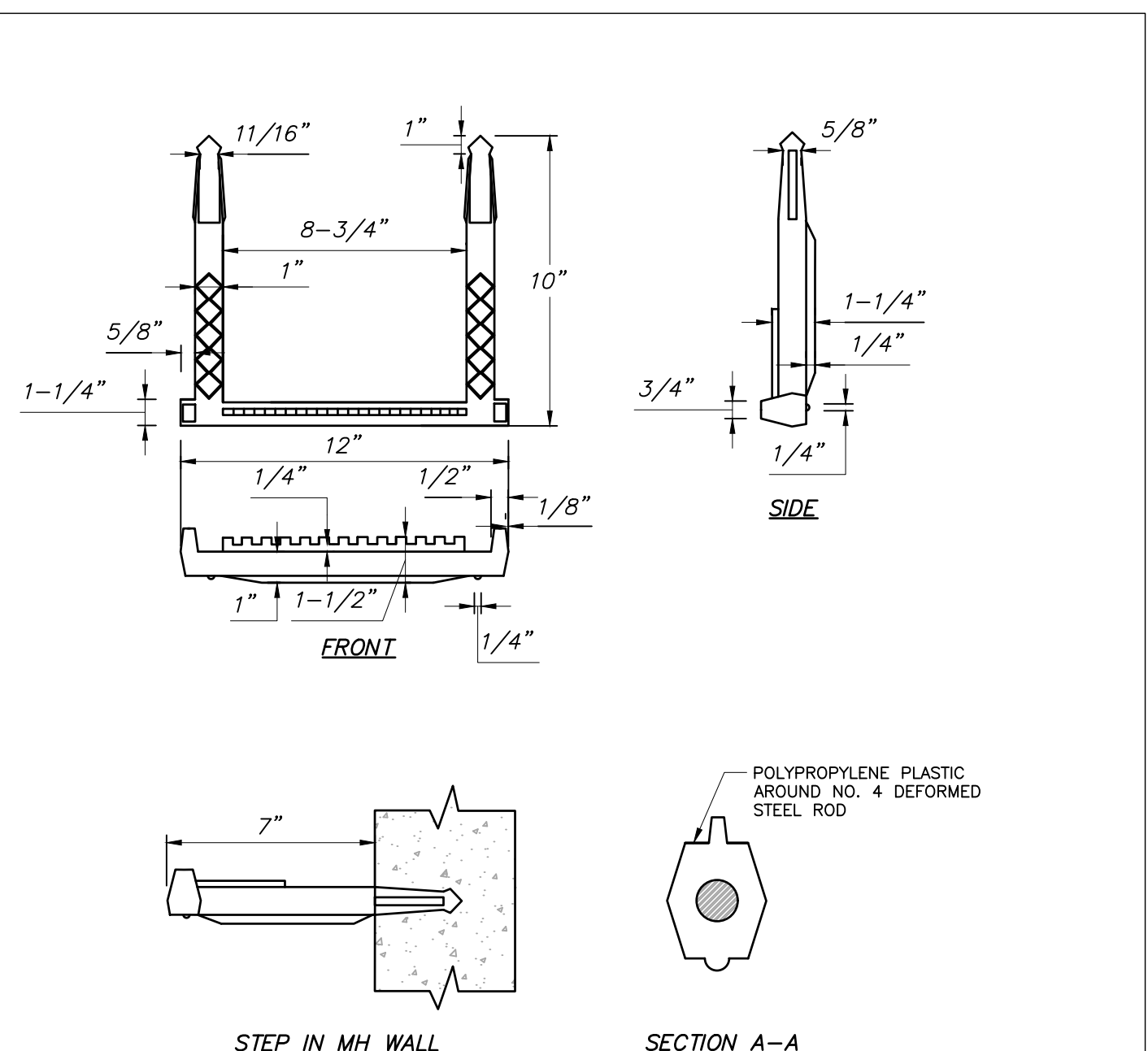
SS-111
C3.1
SANITARY SEWER SERVICE LINE
DATE: 1/14/13
SCALE: NTS



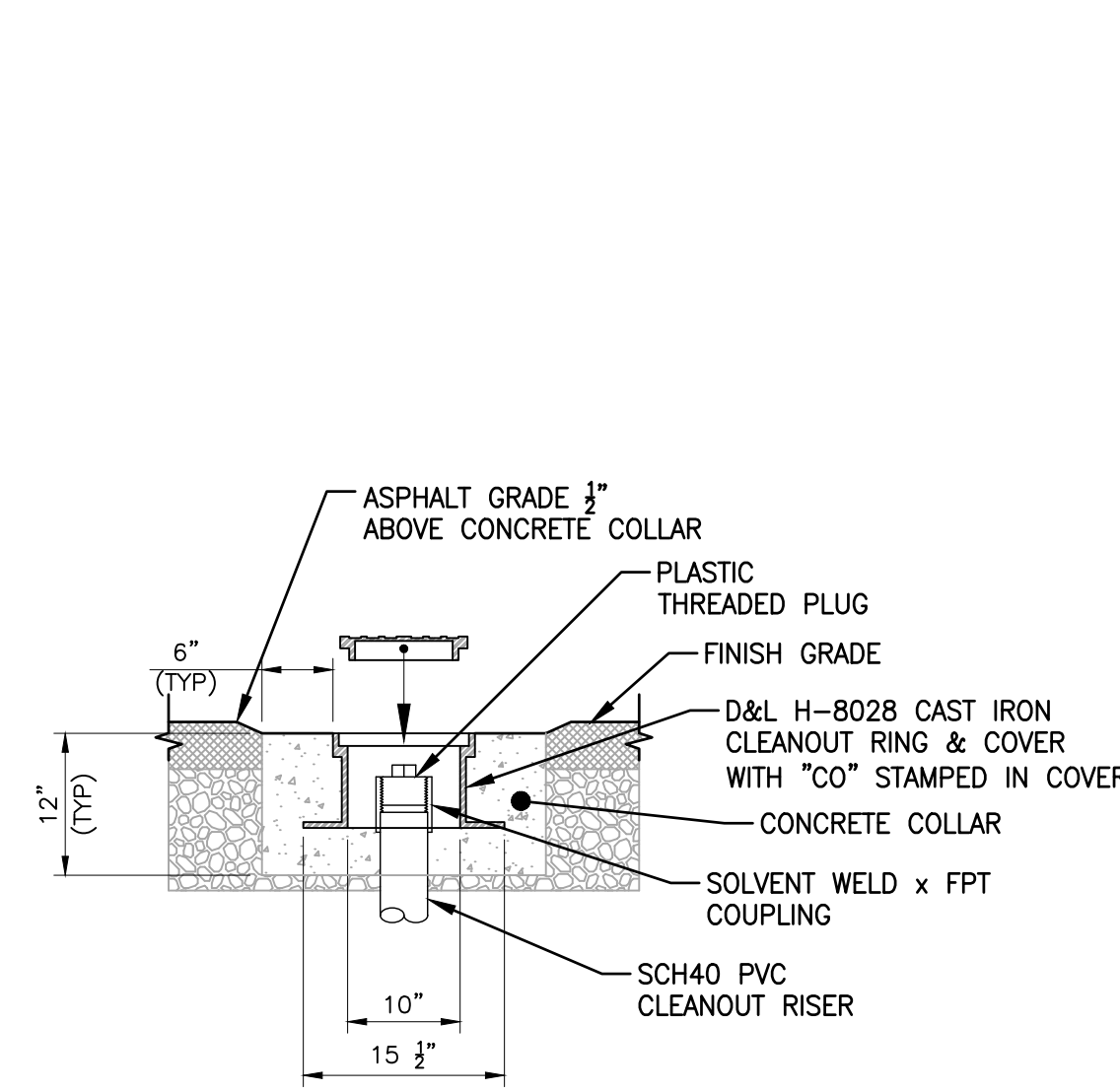
SS-114
C3.1
SERVICE LATERAL BUILDING CLEANOUT
DATE: 1/14/13
SCALE: NTS



SS-101
C3.1
SANITARY SEWER MANHOLE STANDARD
DATE: 1/11/13
SCALE: NTS



SS-106
C3.1
MANHOLE STEPS
DATE: 1/11/13
SCALE: NTS



C3.1
CLEANOUT ACCESS- PAVED AREAS
SCALE: NTS

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JACKSON, WY 83001

03/13/19 DEVELOPMENT PLAN

THE CONTRACTOR IS RESPONSIBLE FOR MATERIALS, DETAILS AND ACCURACY, FOR ALL QUANTITIES AND DIMENSIONS, FOR SELECTING FABRICATION PROCESSES, FOR TECHNIQUES OF ASSEMBLY, FOR PERFORMING WORK IN A SAFE MANNER, AND FOR COORDINATING WORK WITH THAT OF ALL TRADES

JOB NO.: A/E: 17261 / 17-296-02

SCALE: AS INDICATED

DATE: 3/13/19

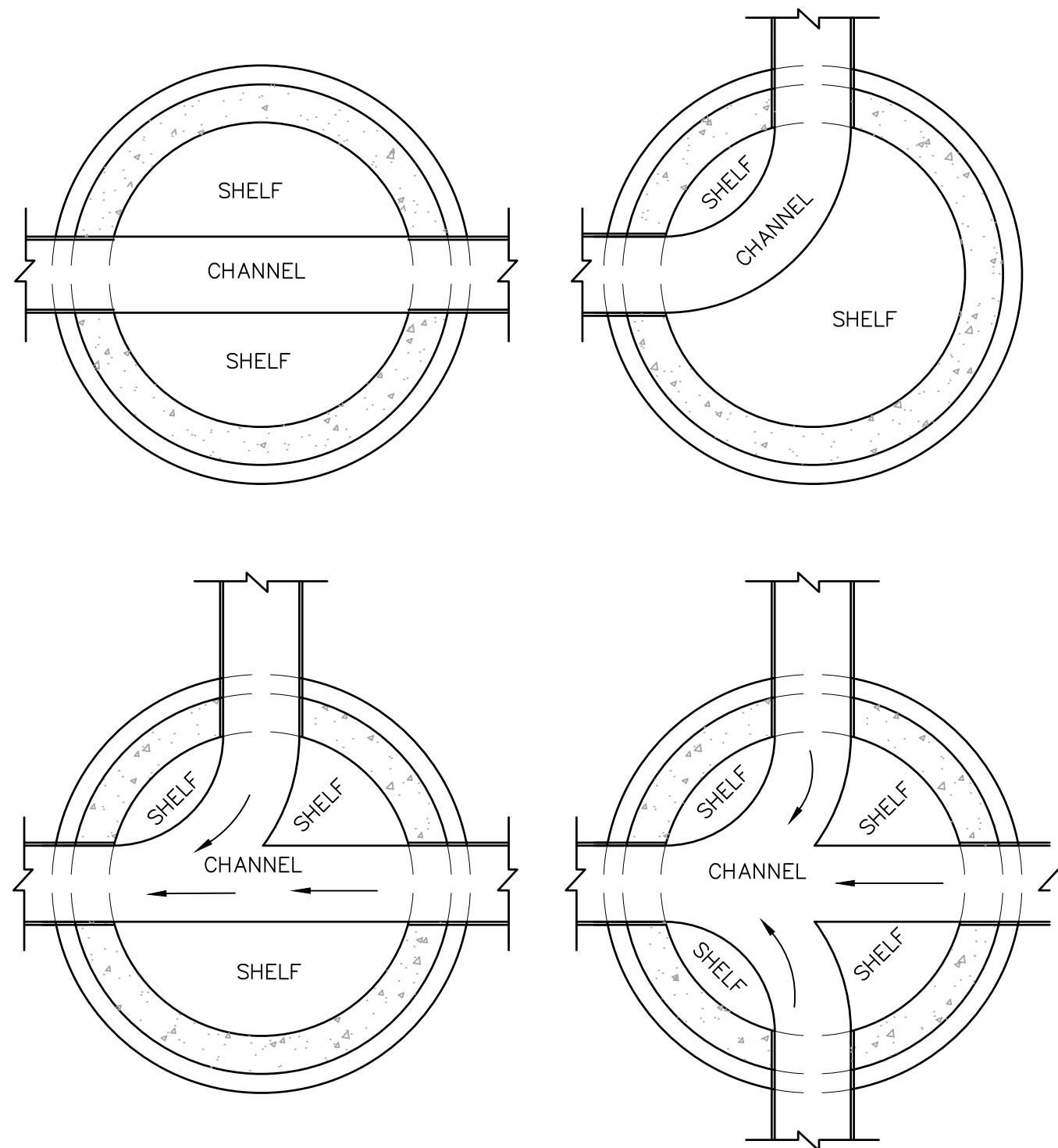
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UTILITY DETAILS

SHEET NO.

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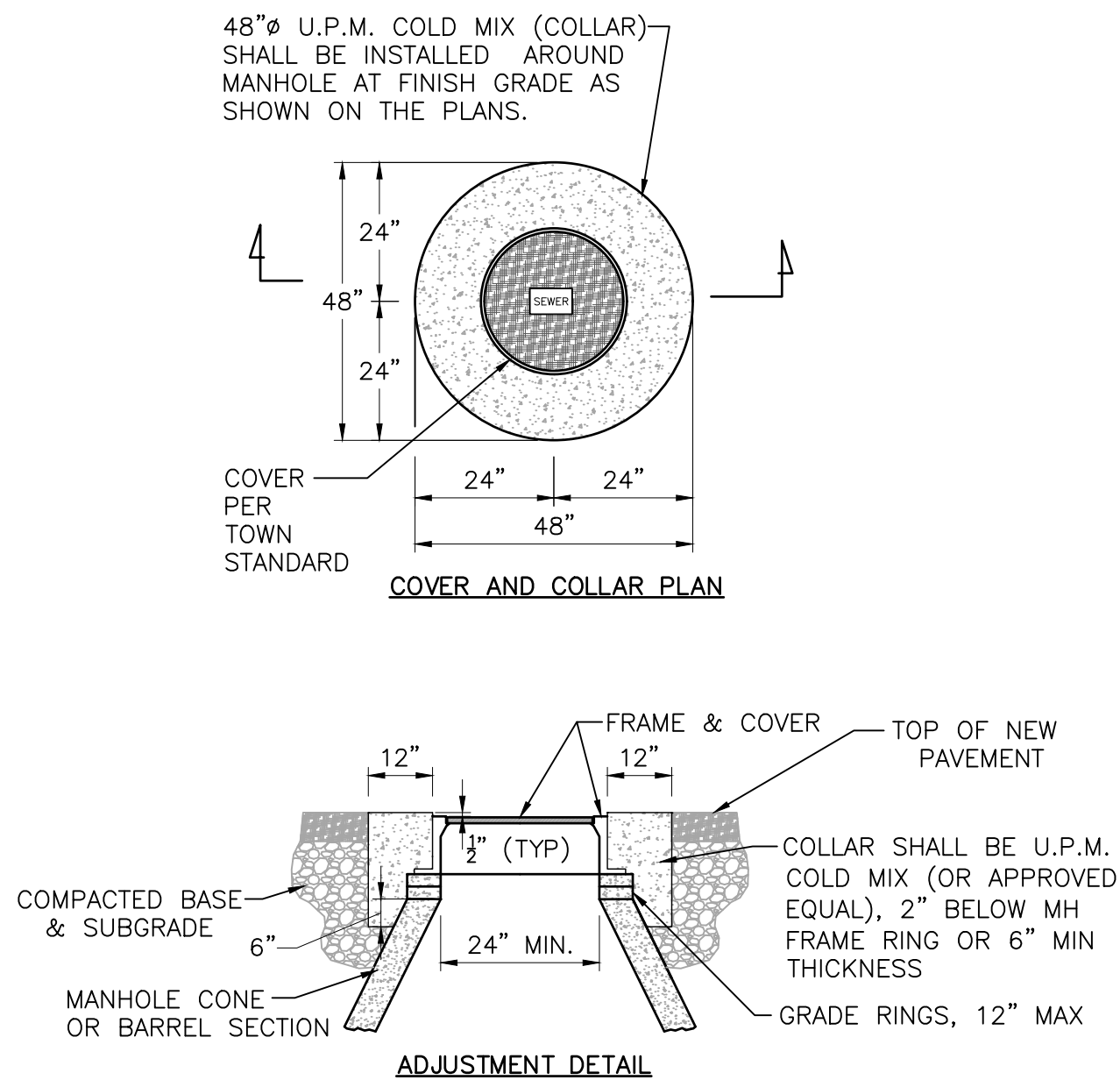
- NOTES:
1. SLOPE ALL SHELVES TO CHANNEL AT 1" PER FOOT, OR AS OTHERWISE NOTED.
 2. SEE PLAN-PROFILE SHEETS FOR SLOPE OF CHANNEL.



SS-107
C3.2

MANHOLE CHANNEL DETAILS

SS-107
DATE: 1/11/13
SCALE: NTS



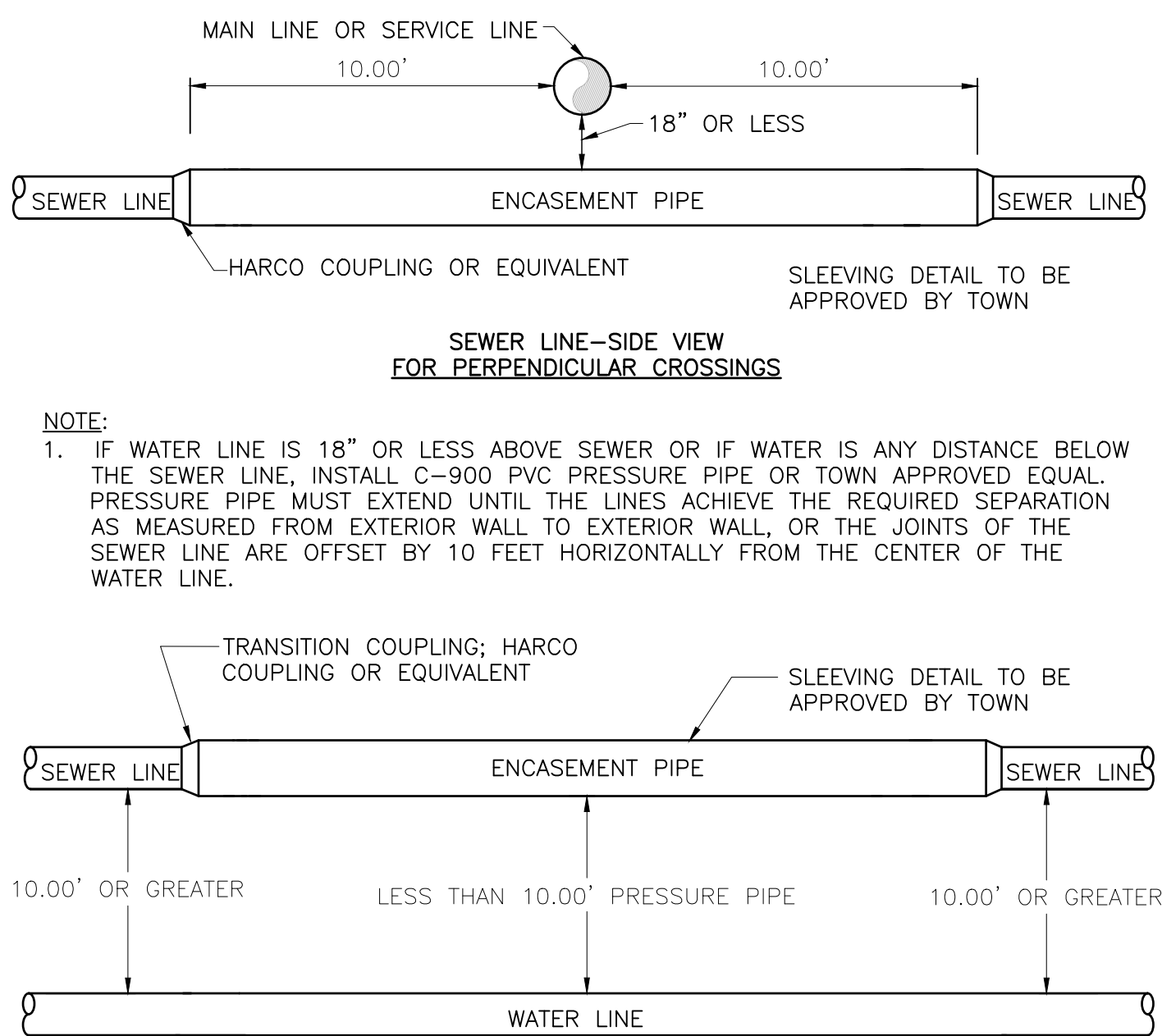
- NOTES:
1. ADJUST MANHOLE UPWARD WITH ADJUSTING RINGS UNDER FRAME. ADJUST MANHOLE DOWNWARD BY REMOVING A PORTION OF THE MANHOLE RISER AND REBUILDING TO PROPER HEIGHT. SLOPE MANHOLE RING AS REQUIRED TO MATCH STREET GRADE AND CROSS SLOPE. MAKE FINAL MANHOLE ADJUSTMENT AFTER PAVING AND BEFORE SEAL COATING.
 2. IF MANHOLE IS WITHIN UNPAVED AREA USE TAPERED COLLAR. SEE TOWN SANITARY SEWER DETAIL SS-110.



SS-109
C3.2

**MANHOLE ADJUSTMENT & COLLAR
DETAIL FOR ASPHALT SURFACES**

SS-109
DATE: 1/11/13
SCALE: NTS



- NOTE:
1. IF WATER LINE IS 18" OR LESS ABOVE SEWER OR IF WATER IS ANY DISTANCE BELOW THE SEWER LINE, INSTALL C-900 PVC PRESSURE PIPE OR TOWN APPROVED EQUAL. PRESSURE PIPE MUST EXTEND UNTIL THE LINES ACHIEVE THE REQUIRED SEPARATION AS MEASURED FROM EXTERIOR WALL TO EXTERIOR WALL, OR THE JOINTS OF THE SEWER LINE ARE OFFSET BY 10 FEET HORIZONTALLY FROM THE CENTER OF THE WATER LINE.
 2. IF APPROVED SEWER PRESSURE PIPE IS INSTALLED, ENCASEMENT PIPE MAY NOT BE REQUIRED AT DISTANCES LESS THAN 10 FEET.

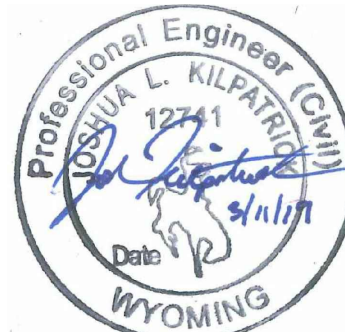


SS-116
C3.2

SEWER PIPE ENCASEMENT

SS-116
DATE: 1/14/13
SCALE: NTS

REGISTRATION



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03/13/19 DEVELOPMENT PLAN

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JOB NO.: A/E: 17261 / 17-296-02

SCALE: AS INDICATED

DATE: 3/13/19

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UTILITY DETAILS

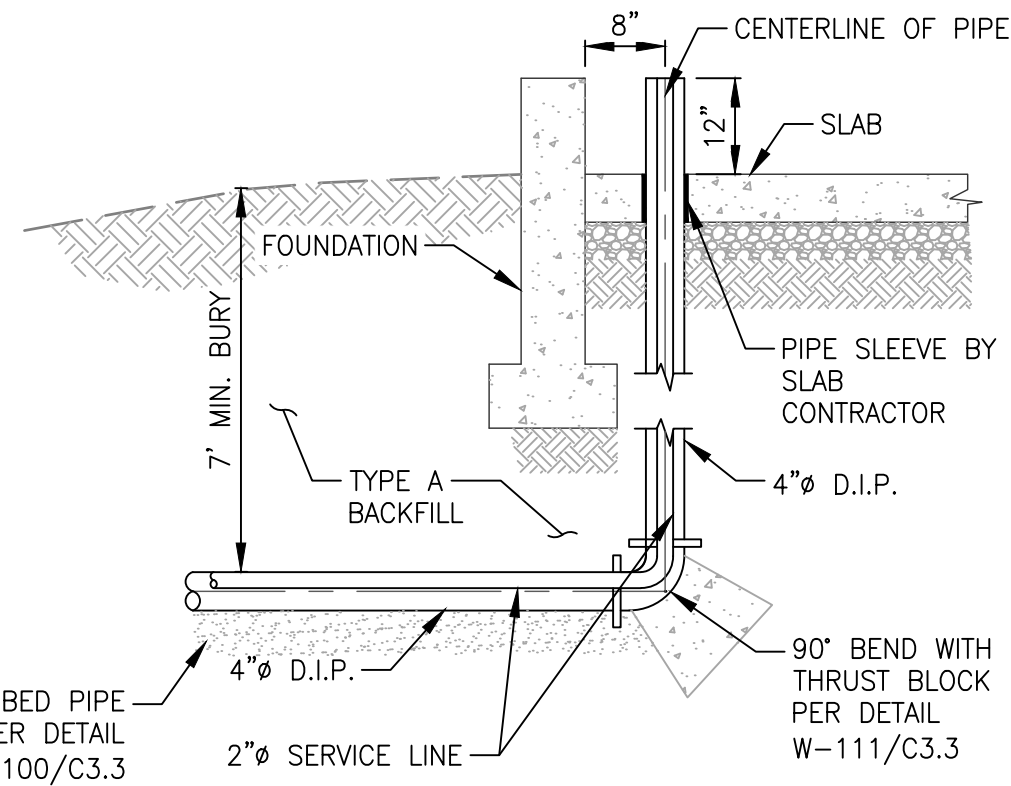
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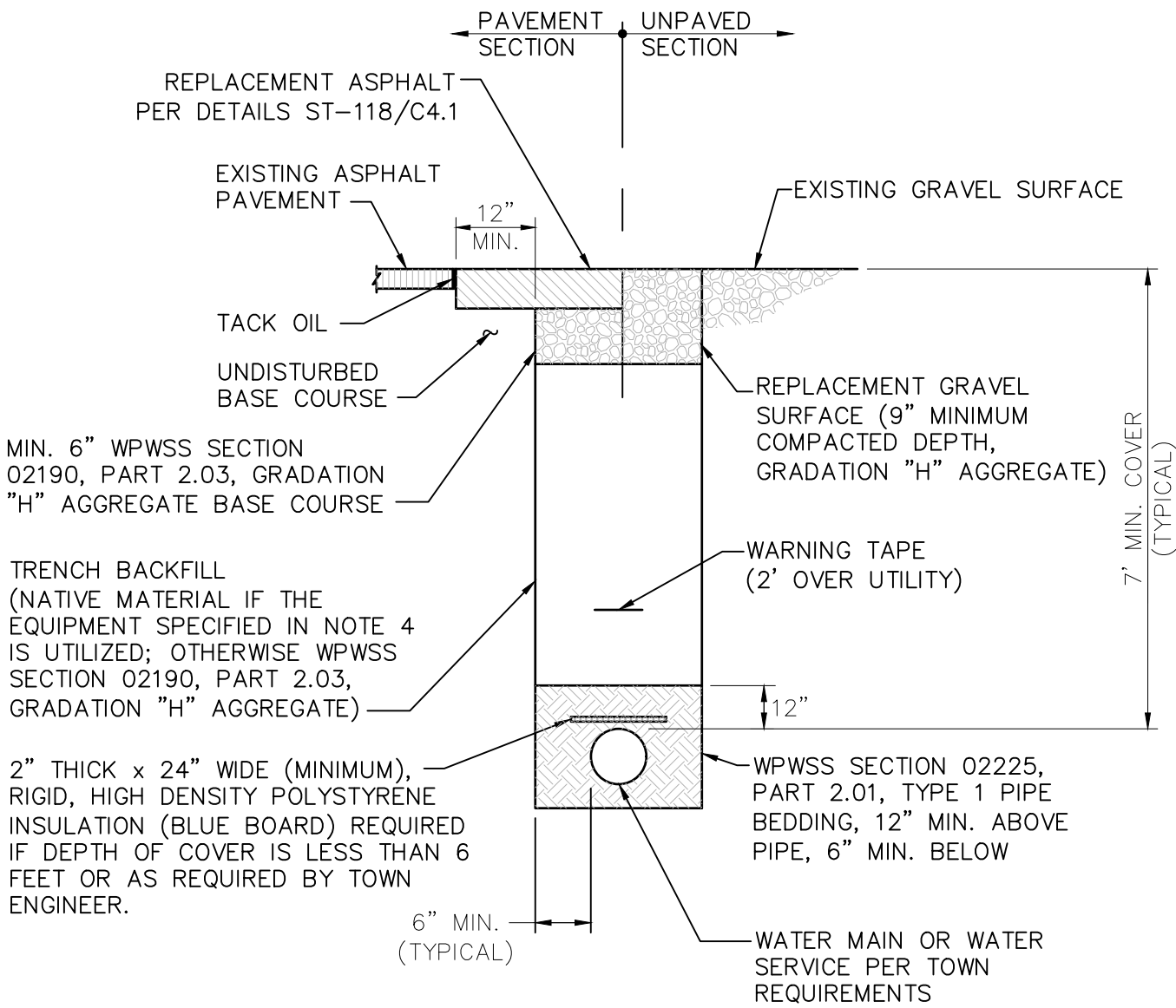
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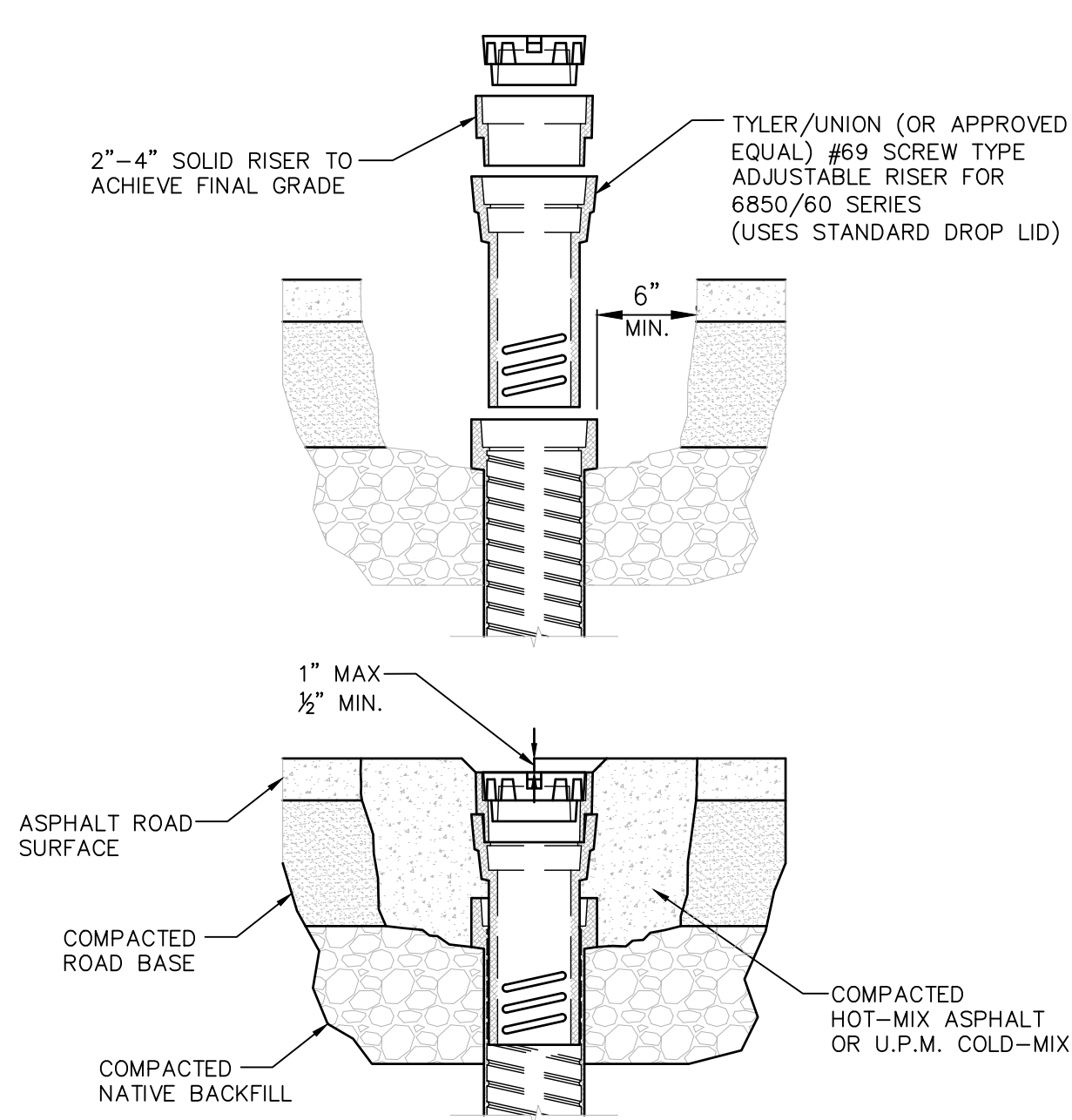


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C3.3 WATER SERVICE ENTRY DETAIL
SCALE: NTS



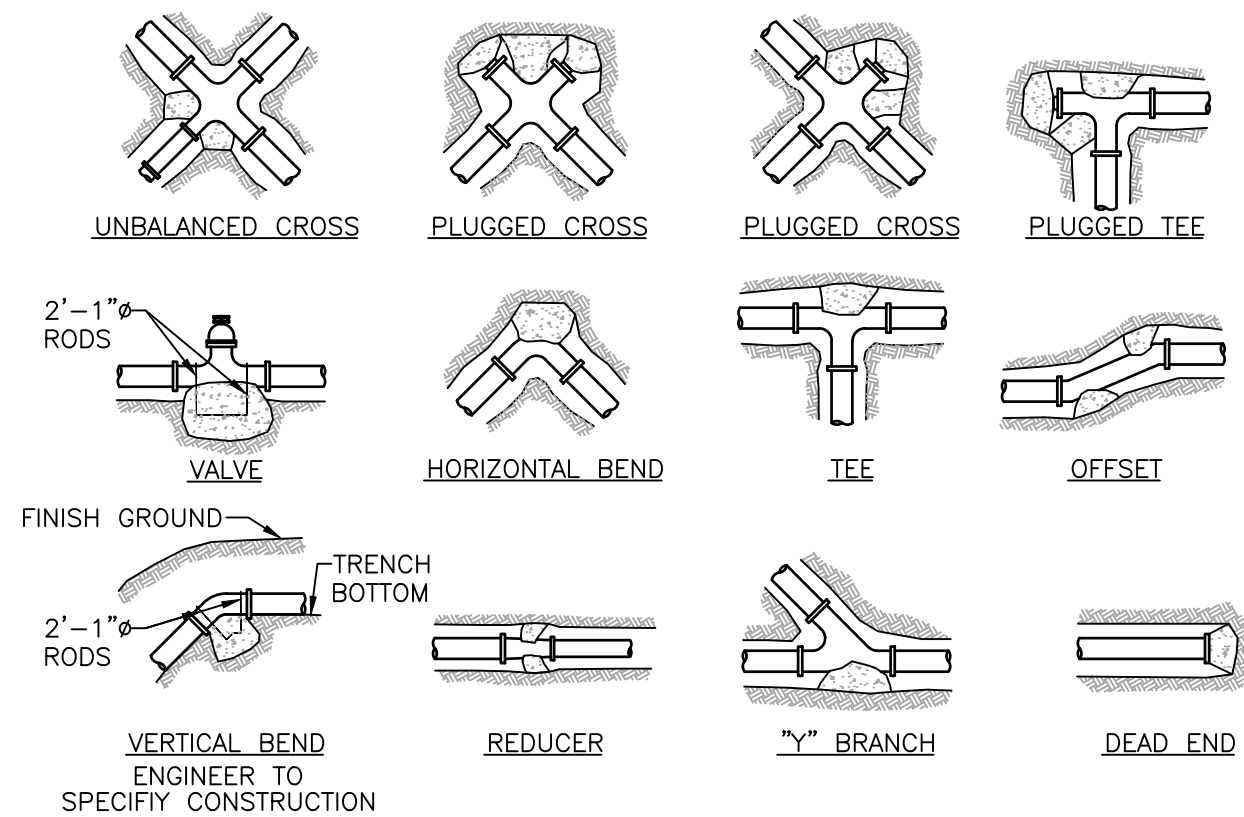
- NOTES:
- TRENCH BACKFILL BELOW THE SURFACE SHALL MEET THE FOLLOWING CRITERIA:
 - 95% MODIFIED PROCTOR DENSITY WITHIN STREET AND ALLEY RIGHTS-OF-WAY.
 - 90% MODIFIED PROCTOR DENSITY OUTSIDE STREET AND ALLEY RIGHTS-OF-WAY.
 - COMPACTION OF NATIVE TRENCH BACKFILL, WITH ALL ROCK LARGER THAN 6" REMOVED, SHALL BE CARRIED OUT IN 2' LIFTS WITH A HOE-PACK OR A VIBRATORY SHEEPS FOOT ROLLER (COMPACTION METHOD AND EQUIPMENT SHALL BE REVIEWED AND APPROVED BY TOWN ENGINEER PRIOR TO BACKFILLING).
 - PIPE BEDDING SHALL BE PLACED IN 6" LIFTS AND THOROUGHLY COMPACTED WITH A JUMPING JACK TO PROVIDE UNIFORM PIPE SUPPORT.
 - UNLESS OTHERWISE DIRECTED, ALL BASE COURSE AND GRAVEL SURFACE REPLACEMENT SHALL BE INSTALLED PER WPSS SECTION 02231, PART 3.03.
 - ALL TRENCH EXCAVATION SHALL CONFORM TO WYOMING OCCUPATIONAL HEALTH AND SAFETY ADMINISTRATION (WYOSHA) REGULATIONS.

W-100
C3.3 WATER MAIN AND SERVICE LINE TRENCH
W-100 DATE: 1/14/13 SCALE: NTS



- NOTES:
- ADJUST WATER VALVES UPWARD OR DOWNWARD AS REQUIRED. FINAL ADJUSTMENT SHALL BE MADE AFTER PAVING AND BEFORE SEAL COATING.
 - THE TOWN SHALL INSPECT THE VERTICAL ALIGNMENT PRIOR TO AND POST BACKFILLING.
 - MUD PLUGS ARE REQUIRED TO BE PLACED IN ALL VALVE BOXES.

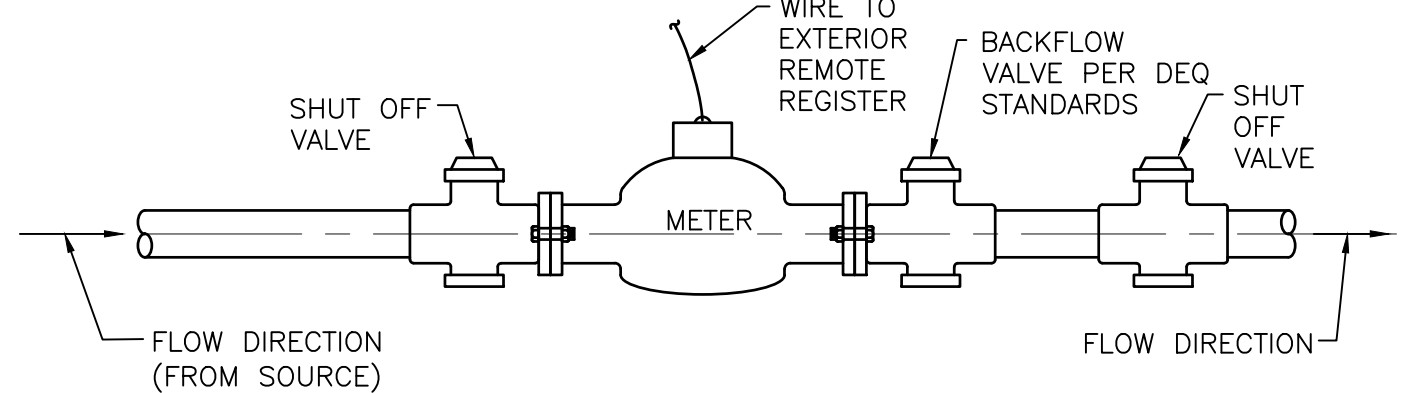
W-106
C3.3 WATER VALVE COLLAR ASSEMBLY
W-106 DATE: 1/16/13 SCALE: NTS



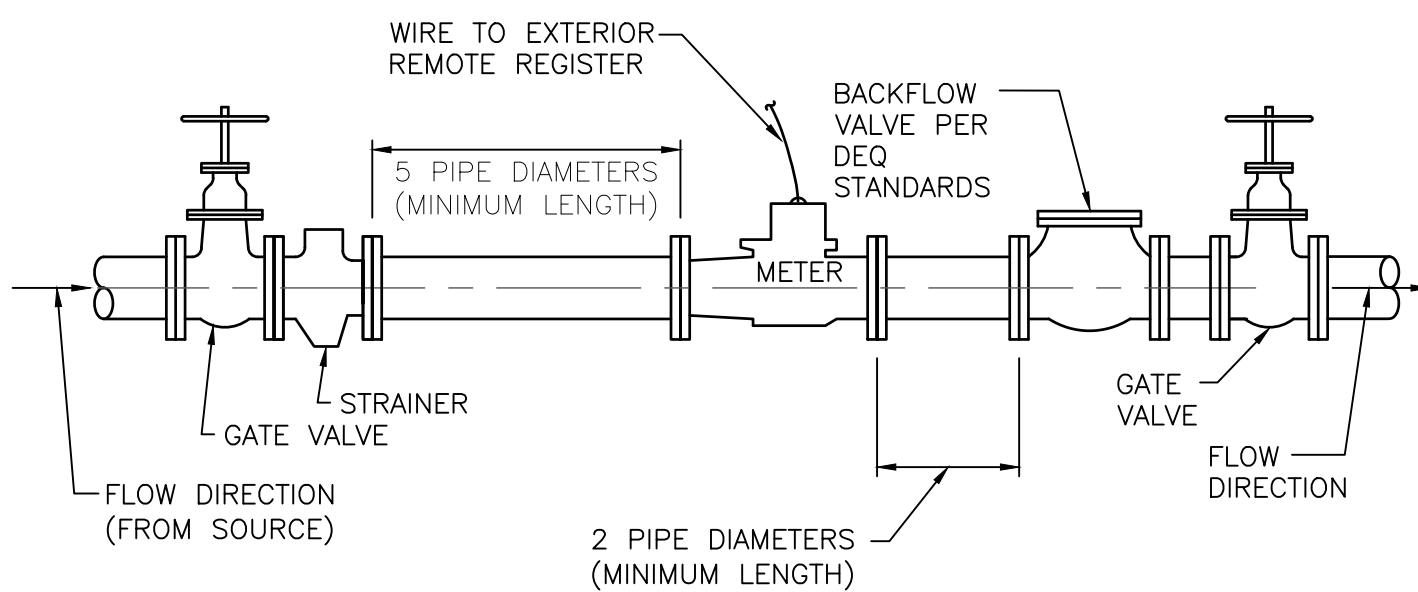
MINIMUM DIMENSIONS FOR THRUST BLOCKING											
FITTING SIZE	TEES & PLUGS		90° BENDS		45° BENDS & WYES		REDUCERS & 22 1/2° BENDS		11 1/4° BENDS		
	A	B	A	B	A	B	A	B	A	B	B
4"	1'-7"	1'-2"	1'-9"	1'-6"	1'-8"	0'-10"	1'-7"	0'-6"	0'-6"	0'-6"	0'-6"
6"	2'-0"	1'-11"	2'-5"	2'-2"	1'-10"	1'-7"	1'-9"	0'-10"	1'-0"	0'-8"	0'-8"
8"	2'-8"	2'-6"	3'-2"	3'-0"	2'-5"	2'-1"	1'-9"	1'-6"	1'-0"	1'-0"	1'-0"
10"	3'-4"	3'-3"	4'-0"	3'-10"	3'-0"	2'-9"	2'-2"	1'-11"	1'-6"	1'-0"	1'-0"
12"	4'-0"	3'-10"	4'-8"	4'-8"	3'-8"	3'-3"	2'-7"	2'-3"	2'-0"	1'-0"	1'-0"
14"	5'-5"	3'-10"	6'-6"	4'-11"	4'-9"	3'-5"	3'-5"	2'-5"	2'-0"	1'-6"	1'-6"
20"	5'-0"	5'-0"	6'-0"	6'-0"	5'-0"	4'-0"	3'-6"	3'-0"	3'-0"	2'-0"	2'-0"
24"	6'-0"	6'-0"	7'-0"	7'-0"	5'-0"	5'-0"	4'-6"	3'-0"	3'-0"	3'-0"	3'-0"
30"	7'-6"	7'-6"	8'-0"	8'-0"	6'-3"	6'-3"	4'-9"	4'-6"	3'-3"	3'-3"	3'-3"

- NOTES:
- SIZE BLOCKS SHALL BE A MINIMUM OF 6" THICK.
 - ALL BLOCKING SHALL BEAR AGAINST UNDISTURBED MATERIAL.
 - DESIGN IS BASED ON 150 PSI MAIN PRESSURE AND 2000 PSF SOIL BEARING CAPACITY.
 - 4 MIL POLYETHYLENE PLASTIC BOND BREAKER SHALL BE PROVIDED BETWEEN THRUST BLOCK AND WATER PIPE.

W-111
C3.3 THRUST BLOCK DETAILS
W-111 DATE: 1/16/13 SCALE: NTS



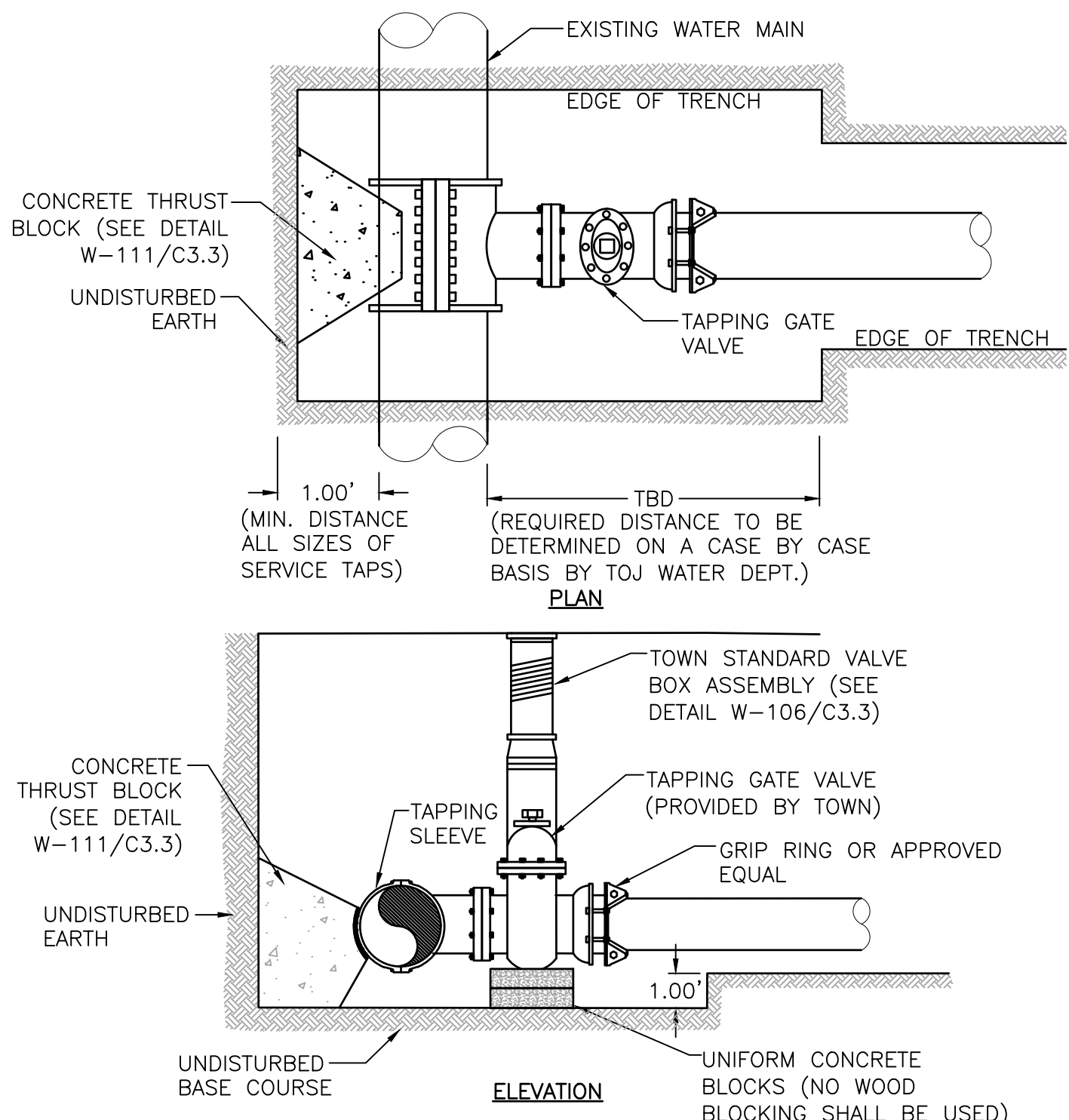
1-1/2" AND 2" DIAMETER ASSEMBLY



3" DIAMETER AND LARGER ASSEMBLY

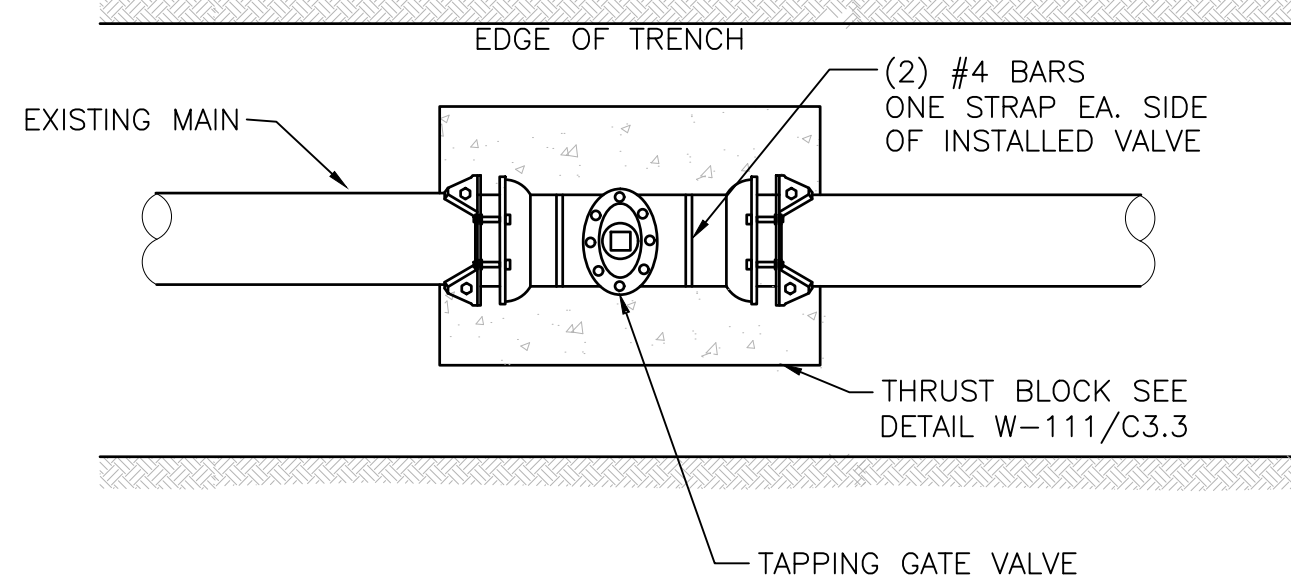
- NOTES:
- SERVICE PIPE MATERIAL SHALL MEET ADOPTED PLUMBING CODE REQUIREMENTS.
 - METER SHALL BE INSTALLED IN HORIZONTAL ALIGNMENT ONLY.
 - CONNECTIONS WITHIN THE ASSEMBLY SHALL BE THREADED OR BOLTED FLANGED, AS APPROPRIATE.
 - METER SHALL BE PURCHASED FROM AND SUPPLIED BY THE TOWN OF JACKSON.

W-113
C3.3 WATER METER INSTALLATION (1.5" & LARGER METERS, INTERIOR INST.)
W-113 DATE: 1/16/13 SCALE: NTS

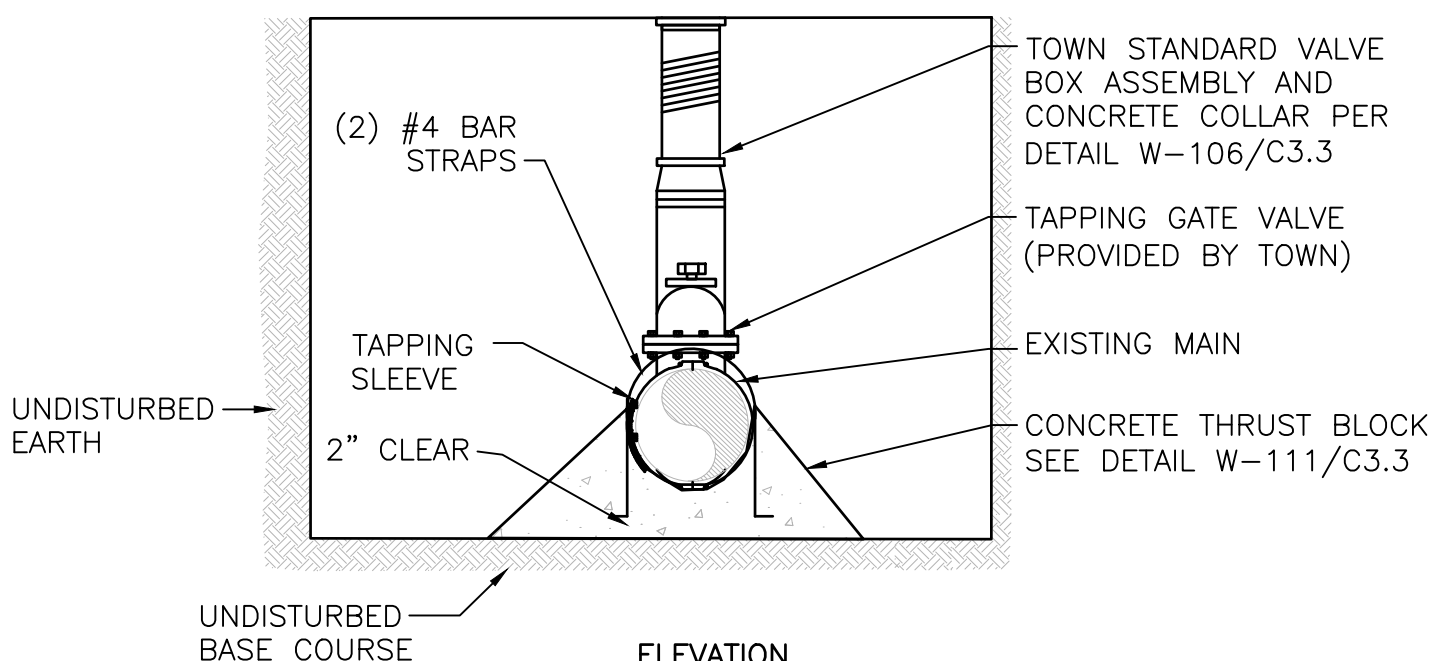


- NOTES:
- TRENCH WILL BE EXCAVATED TO MEET ALL WYOSHA STANDARDS PRIOR TO TAPPING.
 - EXCAVATION OF TAPPING LOCATION SHALL BE APPROVED BY TOJ WATER DEPARTMENT PRIOR TO TAPPING.
 - THE TOWN SHALL COMPLETE THE TAPPING OF THE MAIN. NO OTHER PERSONS SHALL COMPLETE TAP WITHOUT CONSENT OF TOWN. ALL OTHER WATER MAIN WORK SHALL BE THE RESPONSIBILITY OF THE OWNER/CONTRACTOR.

W-118
C3.3 WATER MAIN TAPPING DETAIL
W-118 DATE: 1/17/13 SCALE: NTS



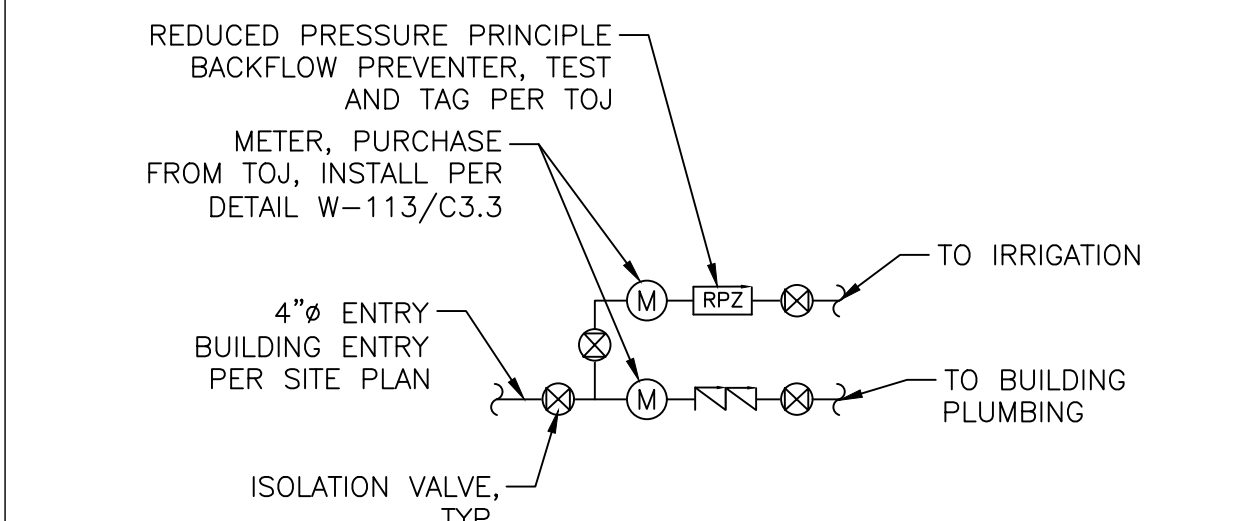
PLAN



ELEVATION

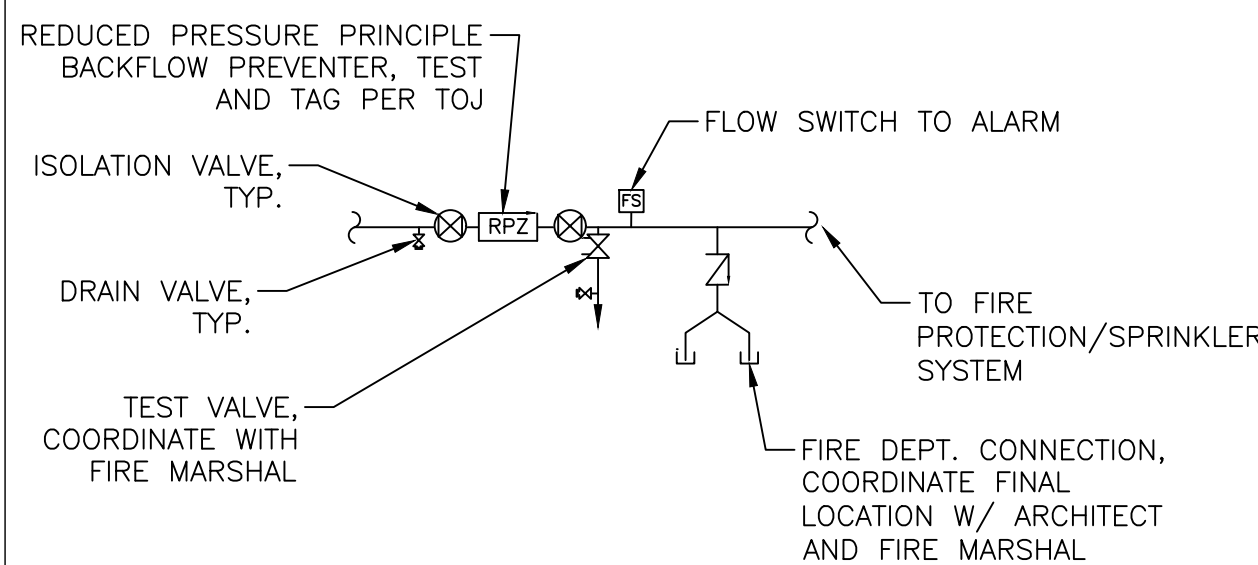
- NOTES:
- THE TOWN SHALL COMPLETE THE TAPPING OF THE MAIN. NO OTHER PERSONS SHALL COMPLETE TAP WITHOUT CONSENT OF TOWN. ALL OTHER WATER MAIN WORK SHALL BE THE RESPONSIBILITY OF THE OWNER.
 - TRENCH WILL BE EXCAVATED TO MEET ALL WYOSHA STANDARDS PRIOR TO TAPPING.
 - 4 MIL POLYETHYLENE PLASTIC BOND BREAKER SHALL BE INSTALLED BETWEEN THRUST BLOCK AND WATER PIPE.

W-119
C3.3 IN LINE WATER VALVE
W-119 DATE: 1/18/13 SCALE: NTS



- NOTE:
- COMPLY WITH METER INSTALLATION DETAIL W-113/C3.3.
 - COMPLY WITH REQUIREMENTS OF NOTE 9, SHEET C3.0.

2
C3.3 DOMESTIC WATER ENTRY DETAIL
SCALE: NTS

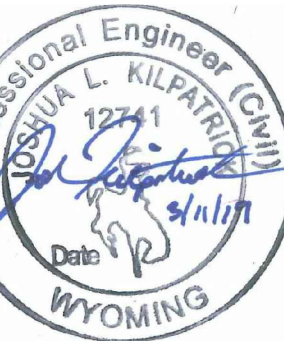


- NOTE:
- COMPLY WITH REQUIREMENTS OF NOTE 9, SHEET C3.0.

3
C3.3 FIRE ENTRY DETAIL
SCALE: NTS

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SCALE: AS INDICATED

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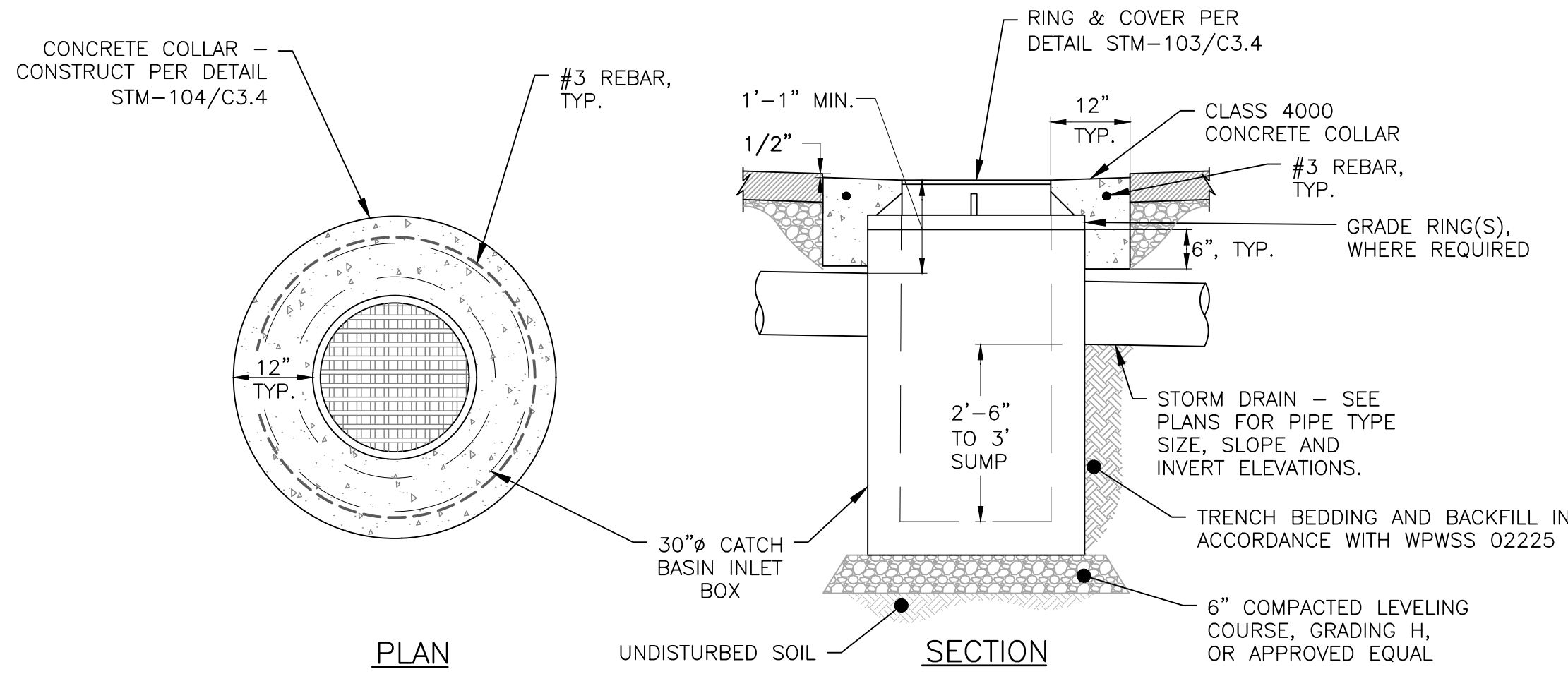
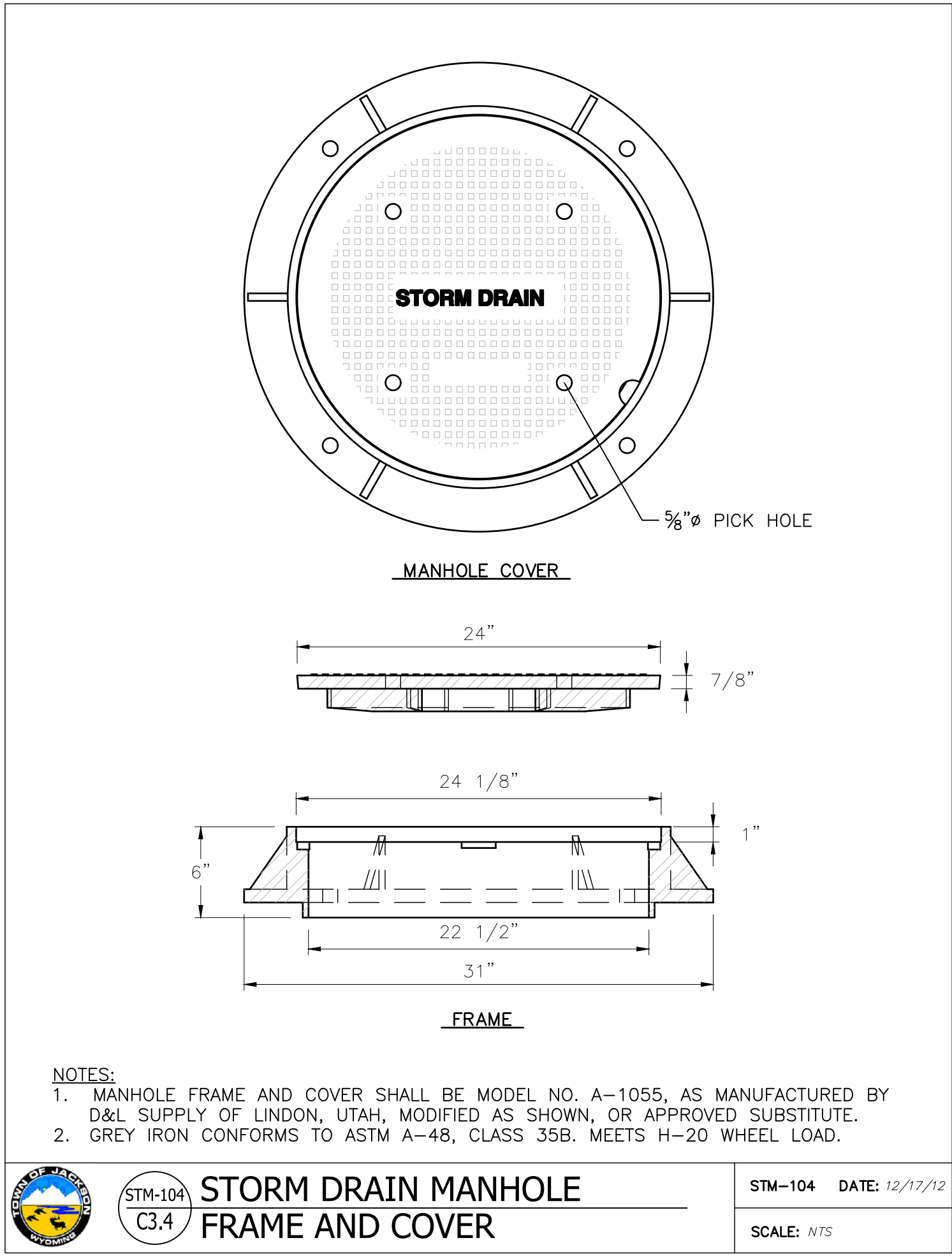
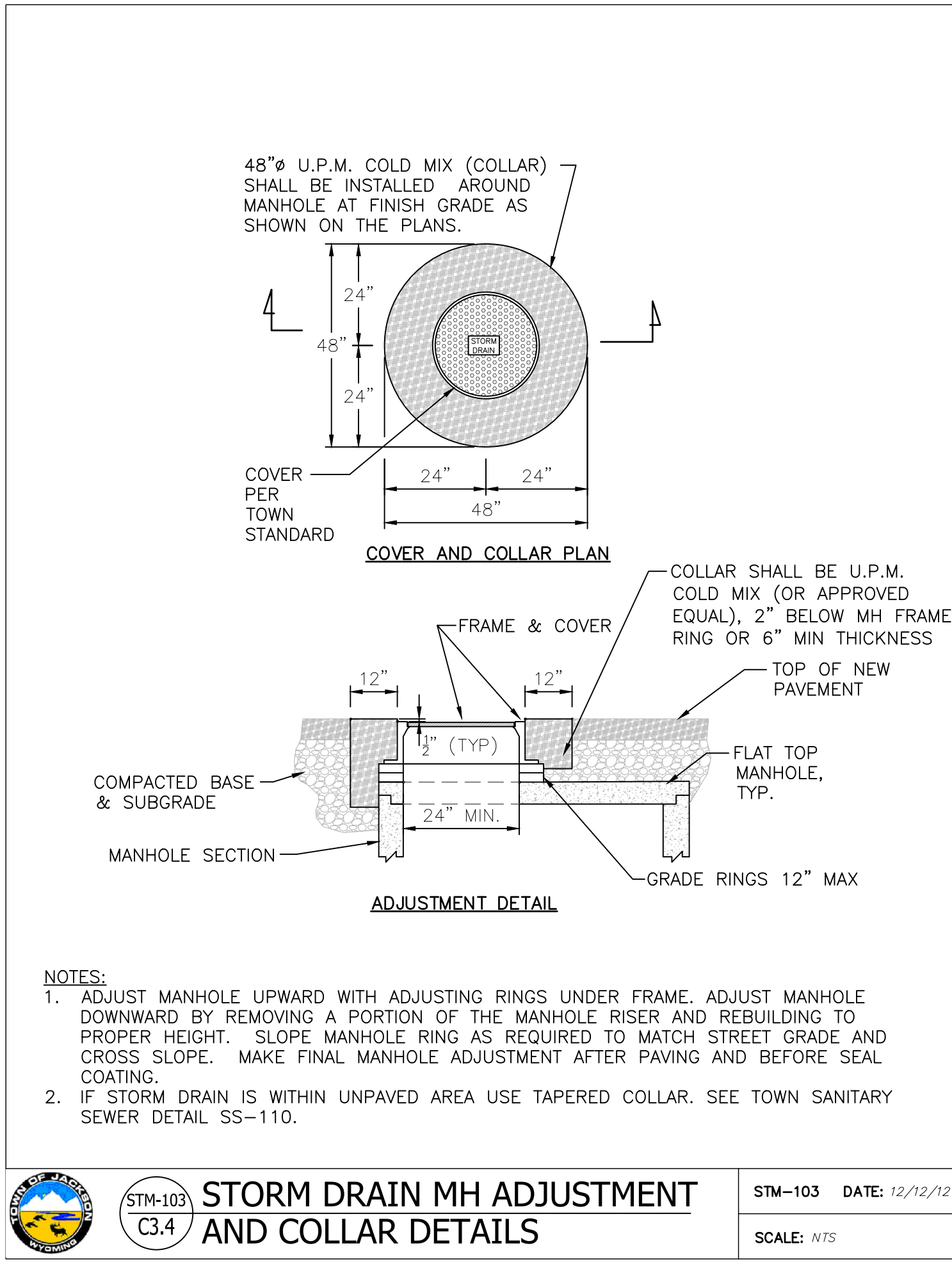
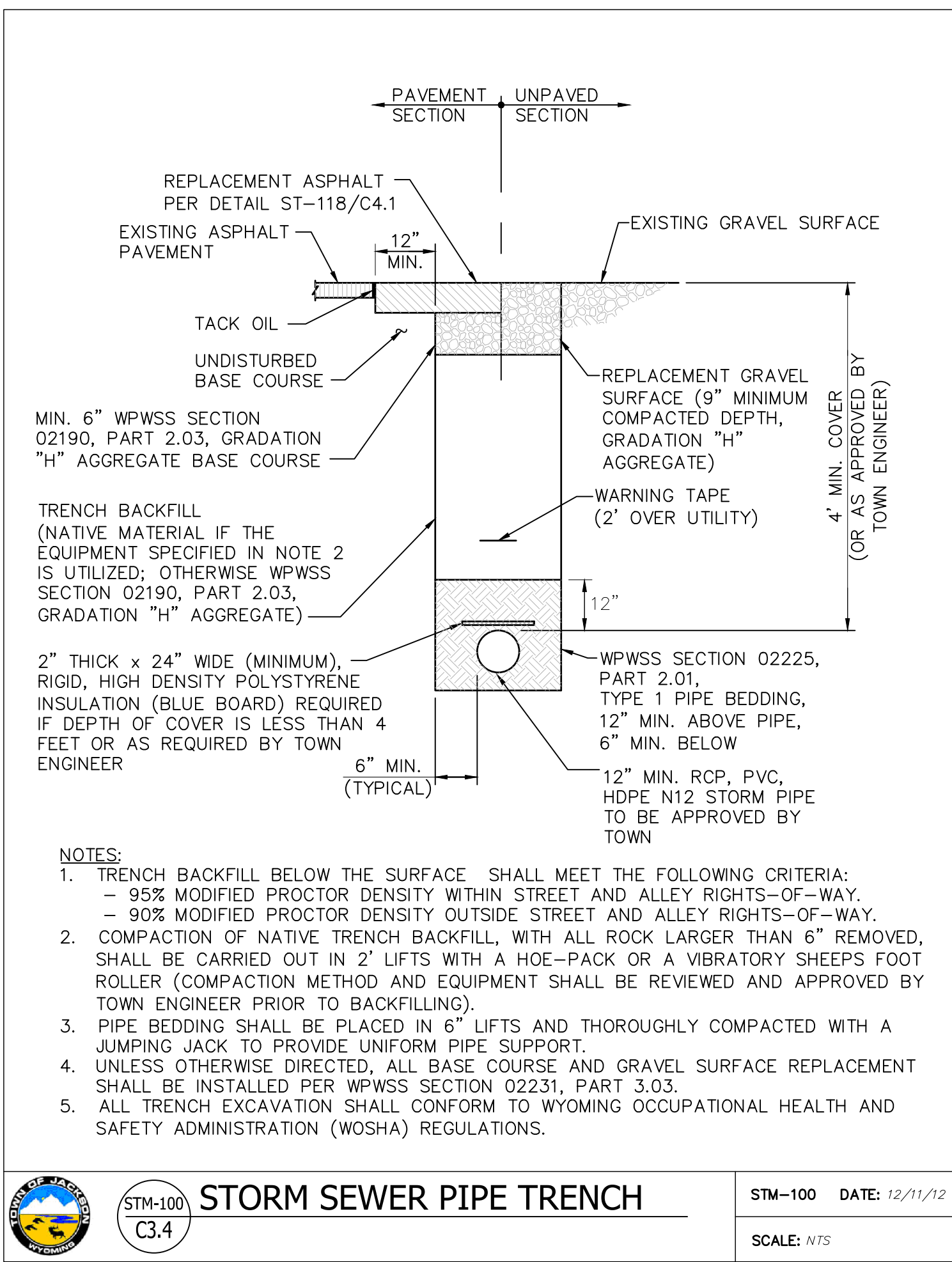
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UTILITY DETAILS

SHEET NO.

C3.3

S:\Projects\2017\296-02 640-650 Glenwood PUB - UTILITY DETAILS - Nov 13 2019 10:28:05 pm PLOTTED BY: kpatrick DWG FORMAT: C3.4



- NOTES:
1. PROVIDE 0.1' DROP FROM INLET AND OUTLET PIPES.
 2. MATCH PIPE INVERTS CALLED OUT IN PLAN.
 3. GROUT BOTTOM OF CATCH BASIN, AS NECESSARY, TO OUTLET INVERT AND PROVIDE POSITIVE DRAINAGE.
 4. TRENCH BACKFILL SHALL BE TYPE A FOR ALL STORM DRAIN WORK.

1
C3.4

AREA DRAIN & CATCH BASIN DETAIL

SCALE: NTS

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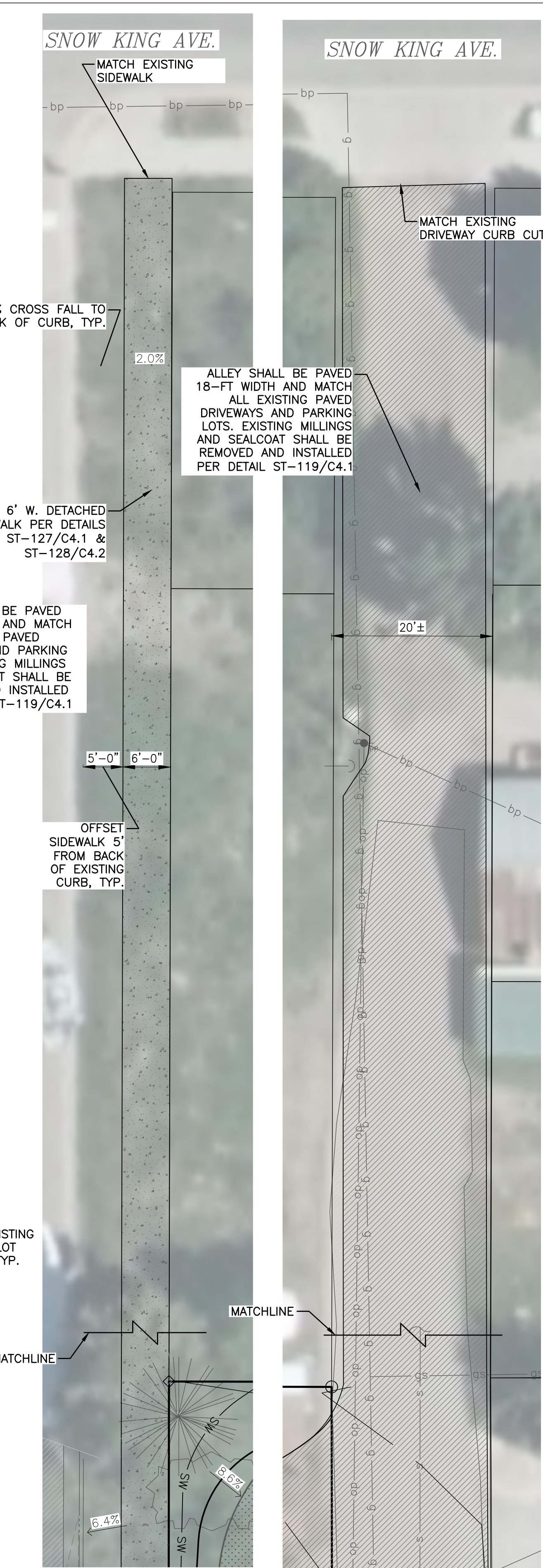
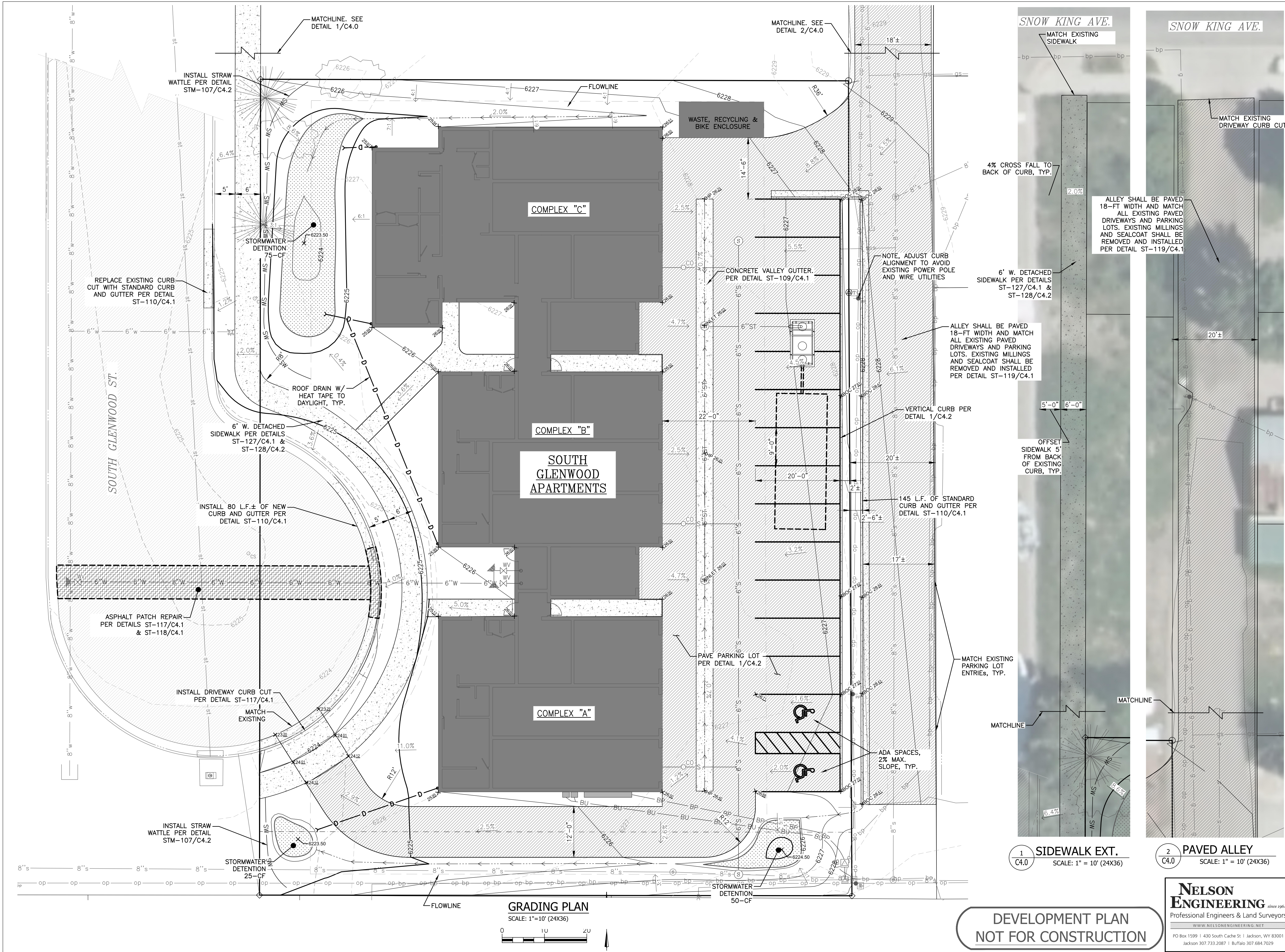
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UTILITY DETAILS

SHEET NO.

C3.4

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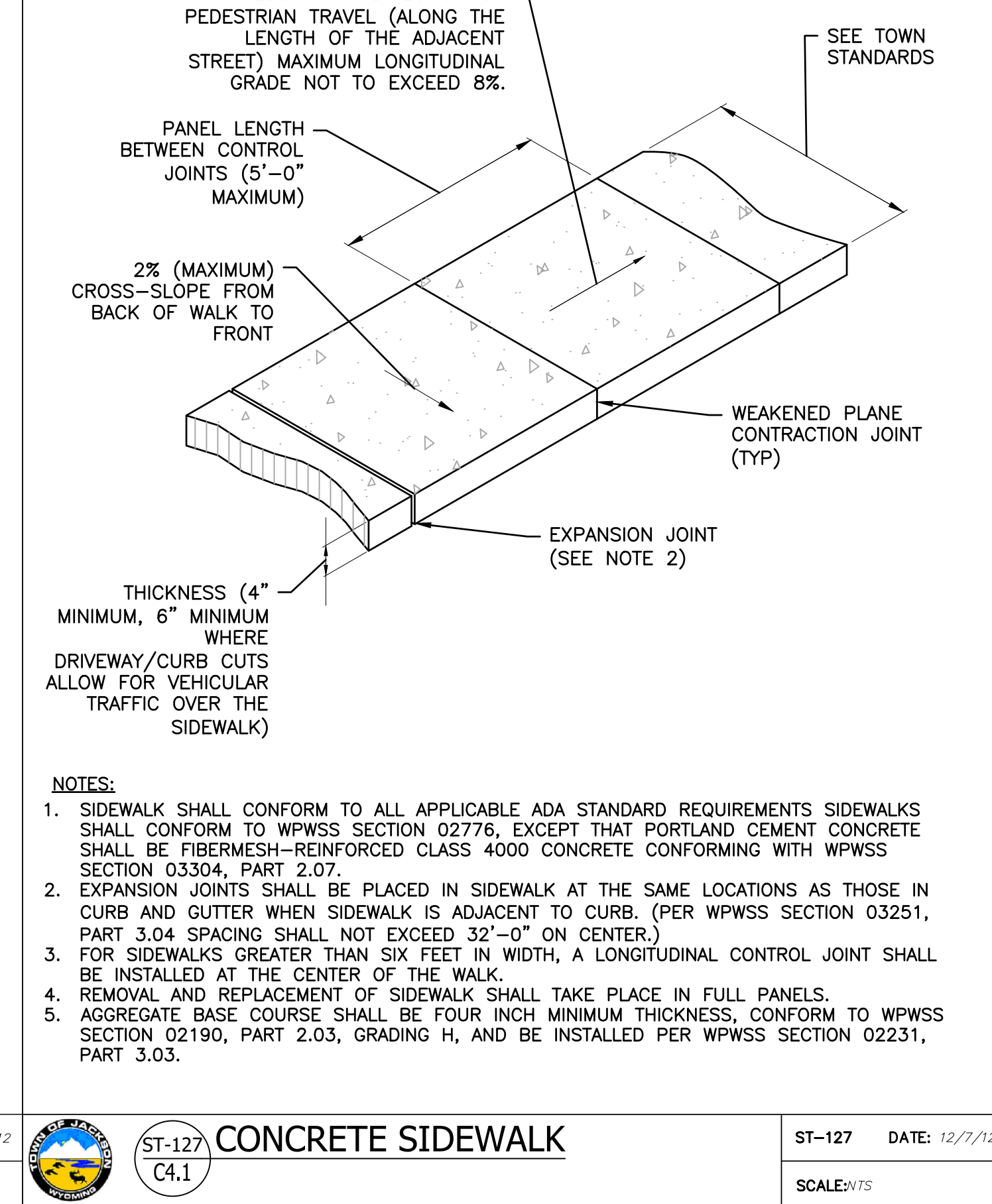
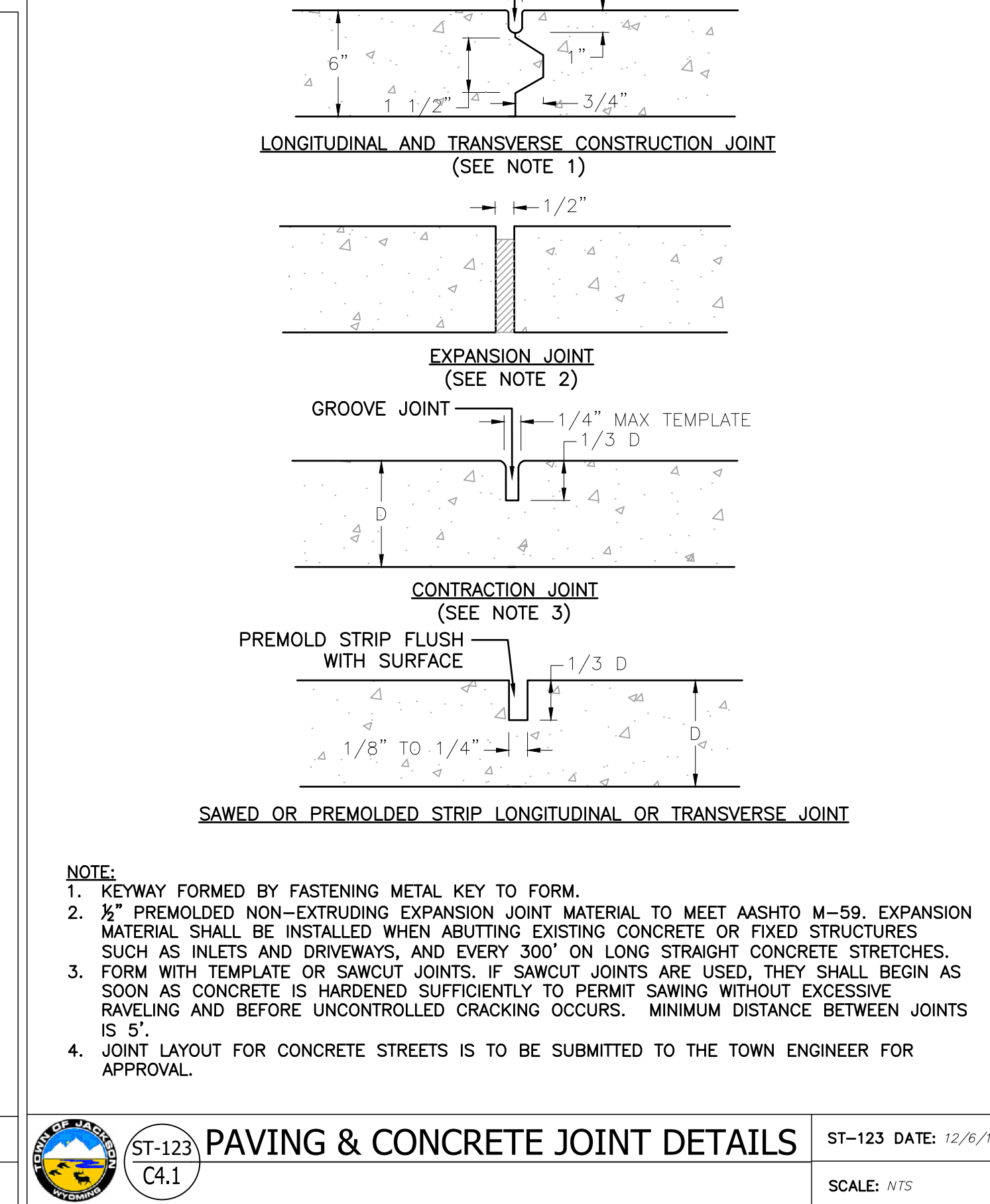
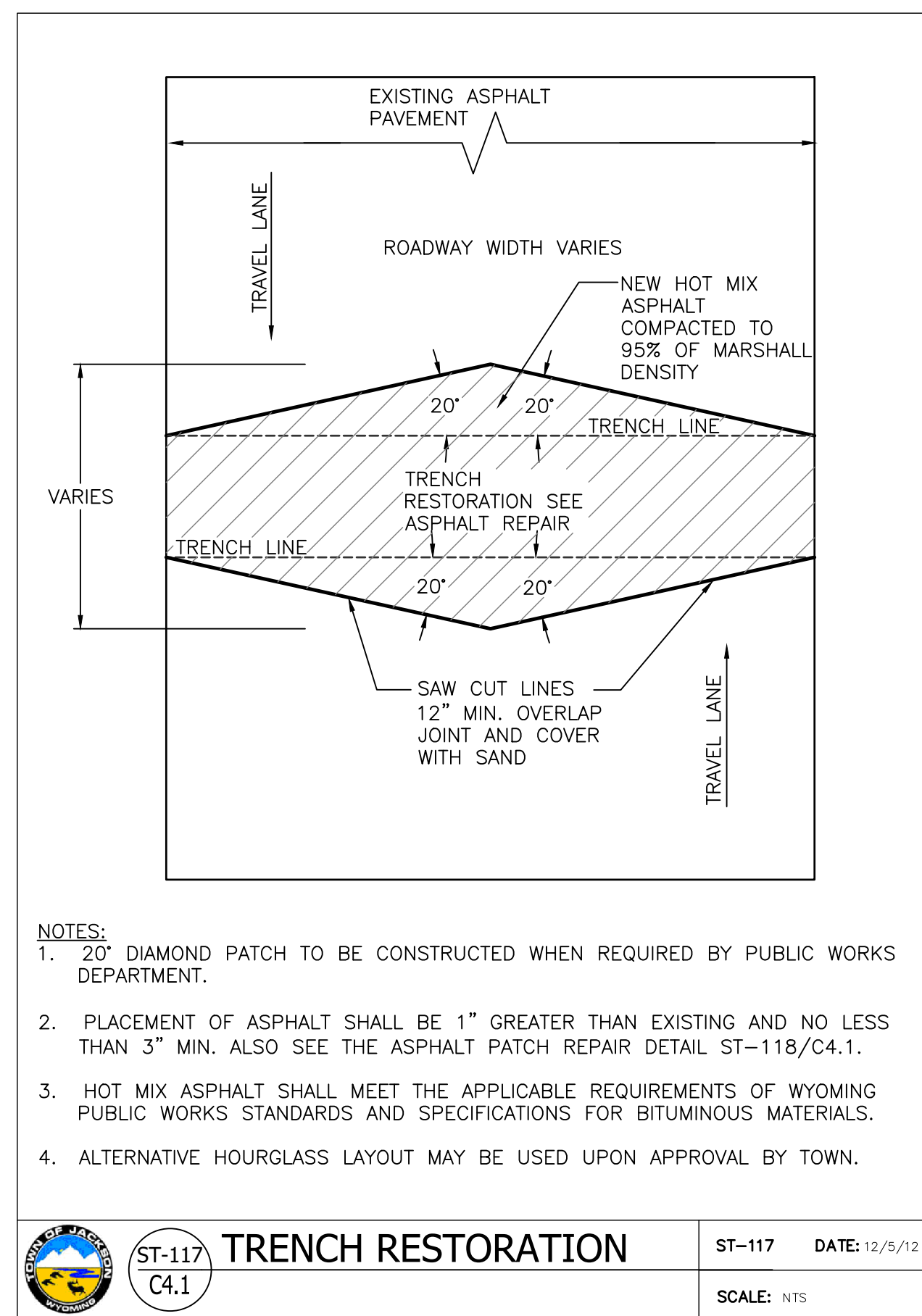
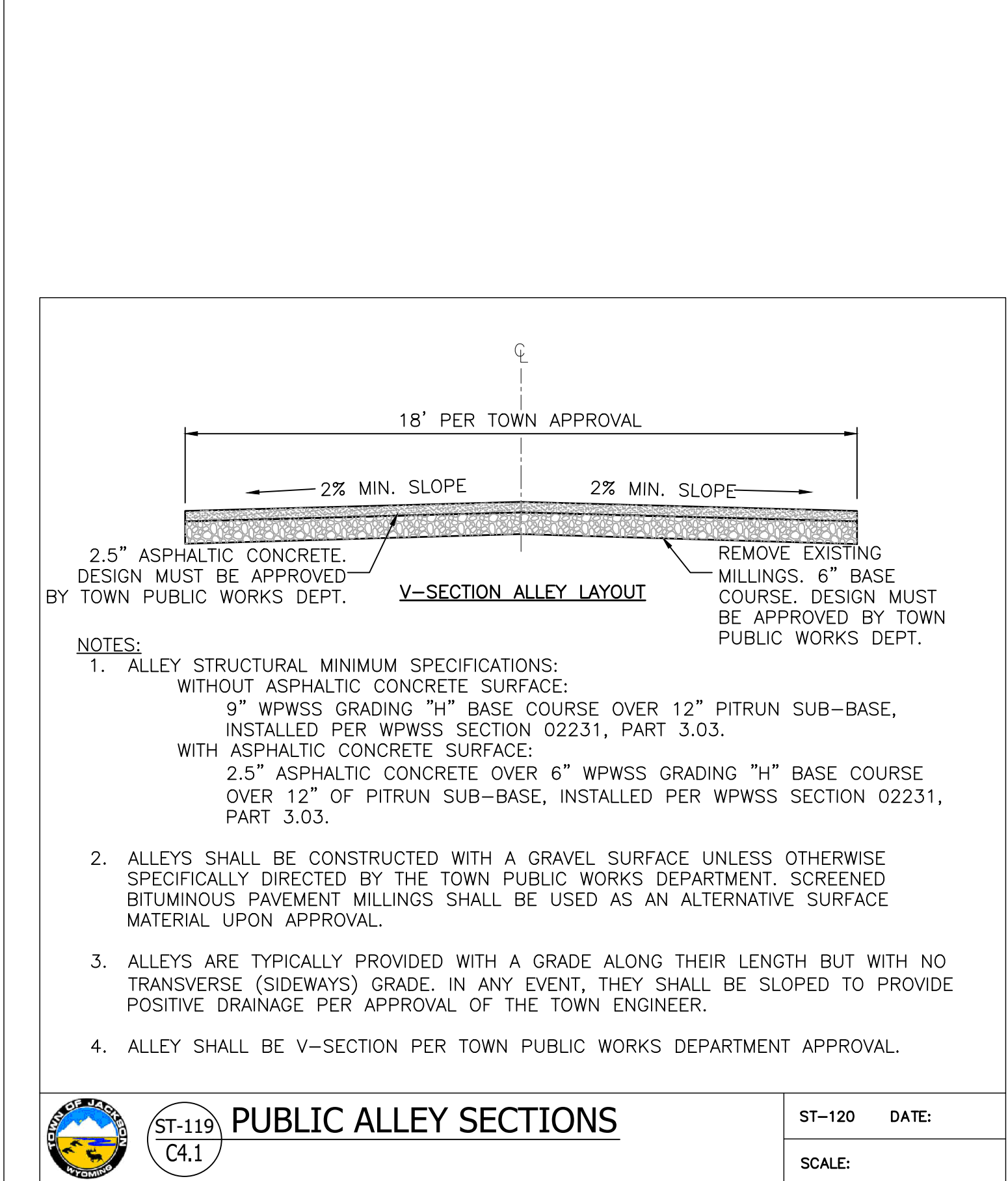
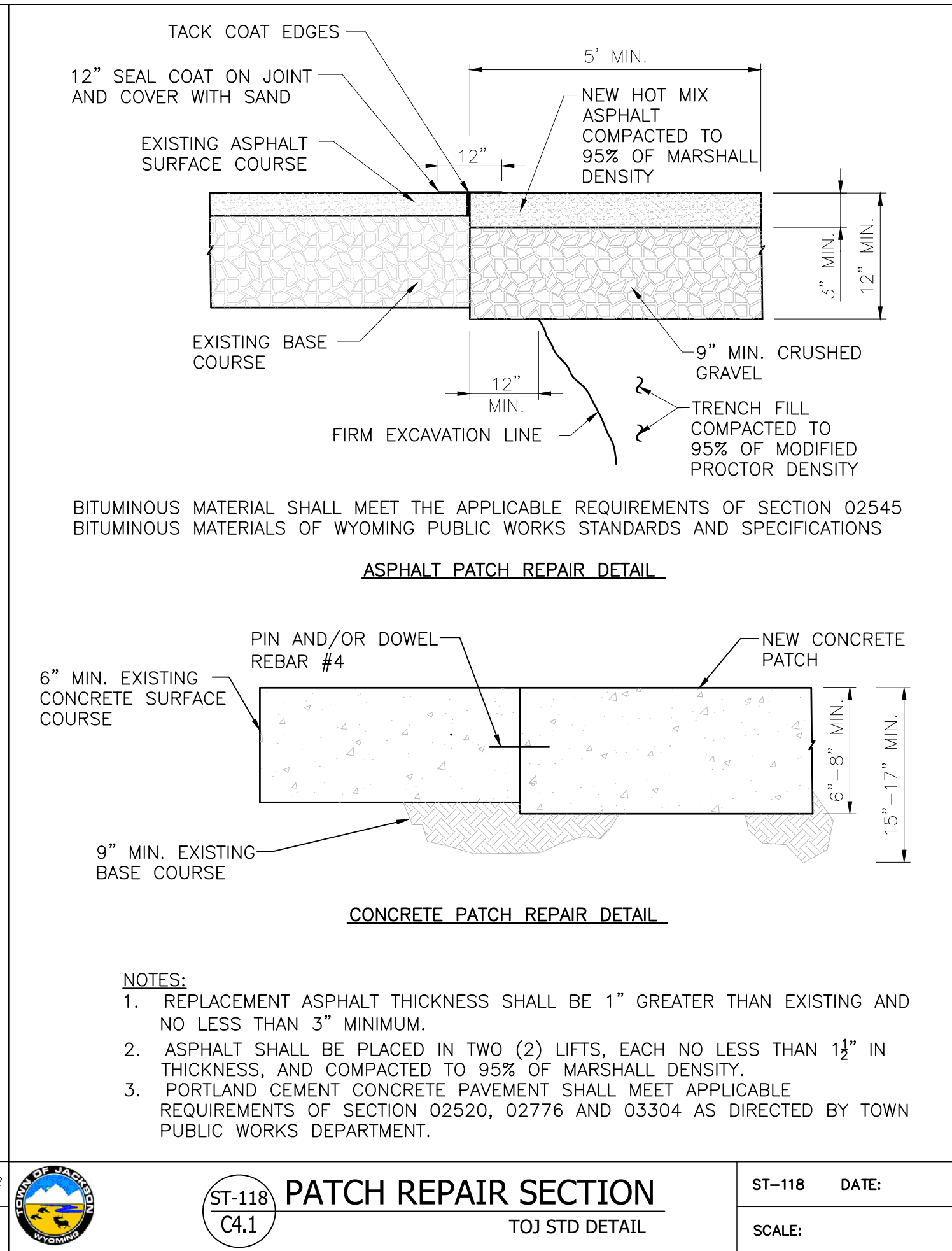
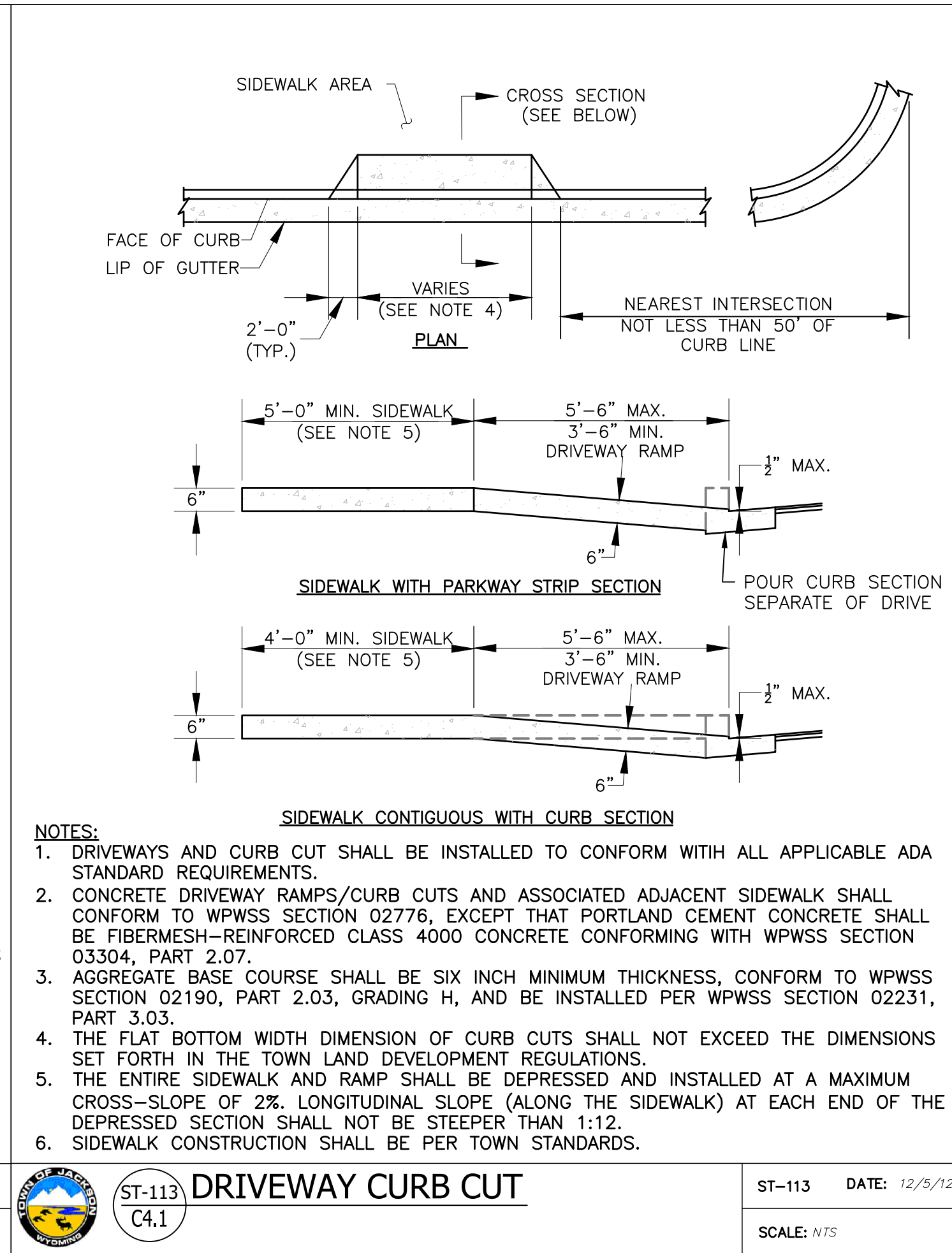
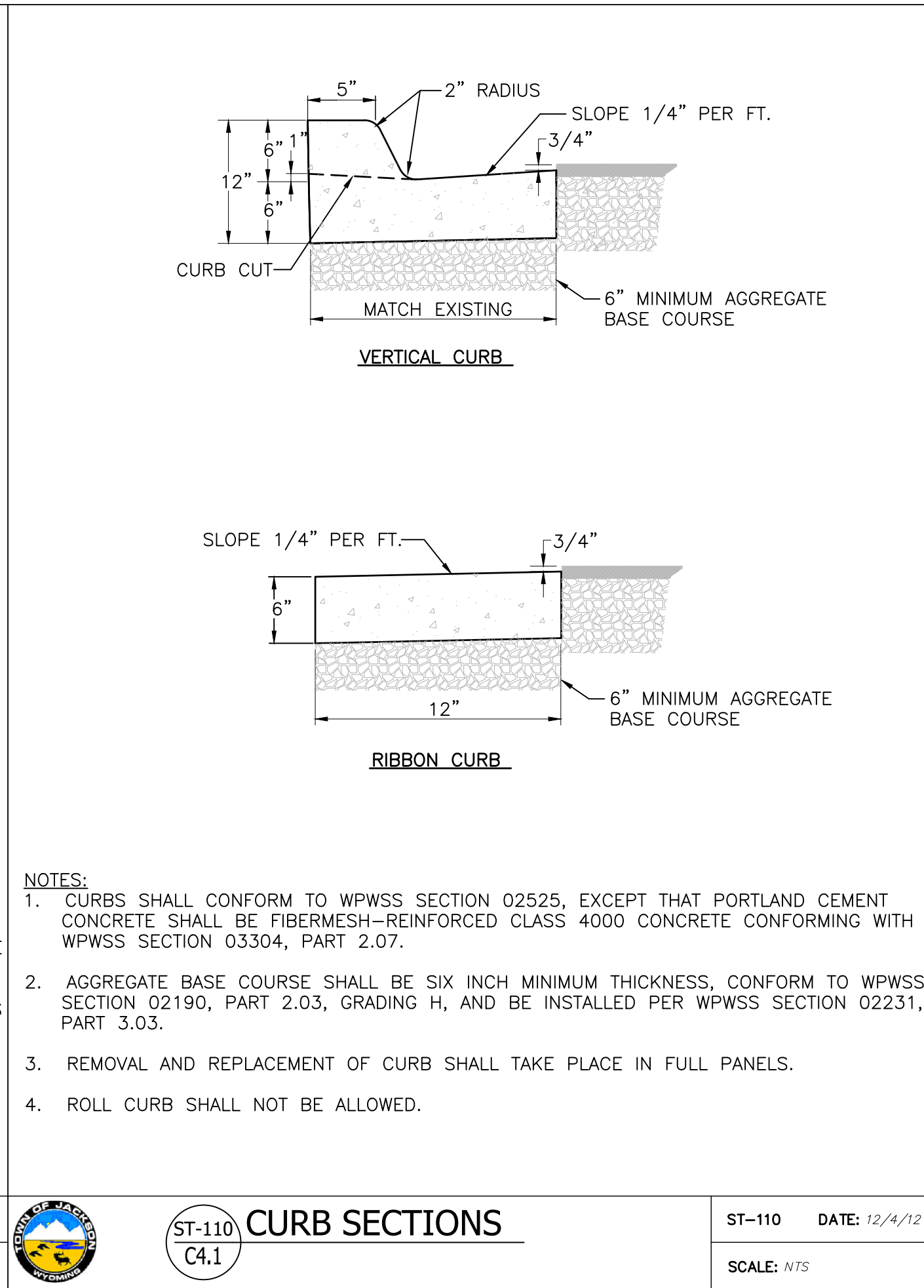
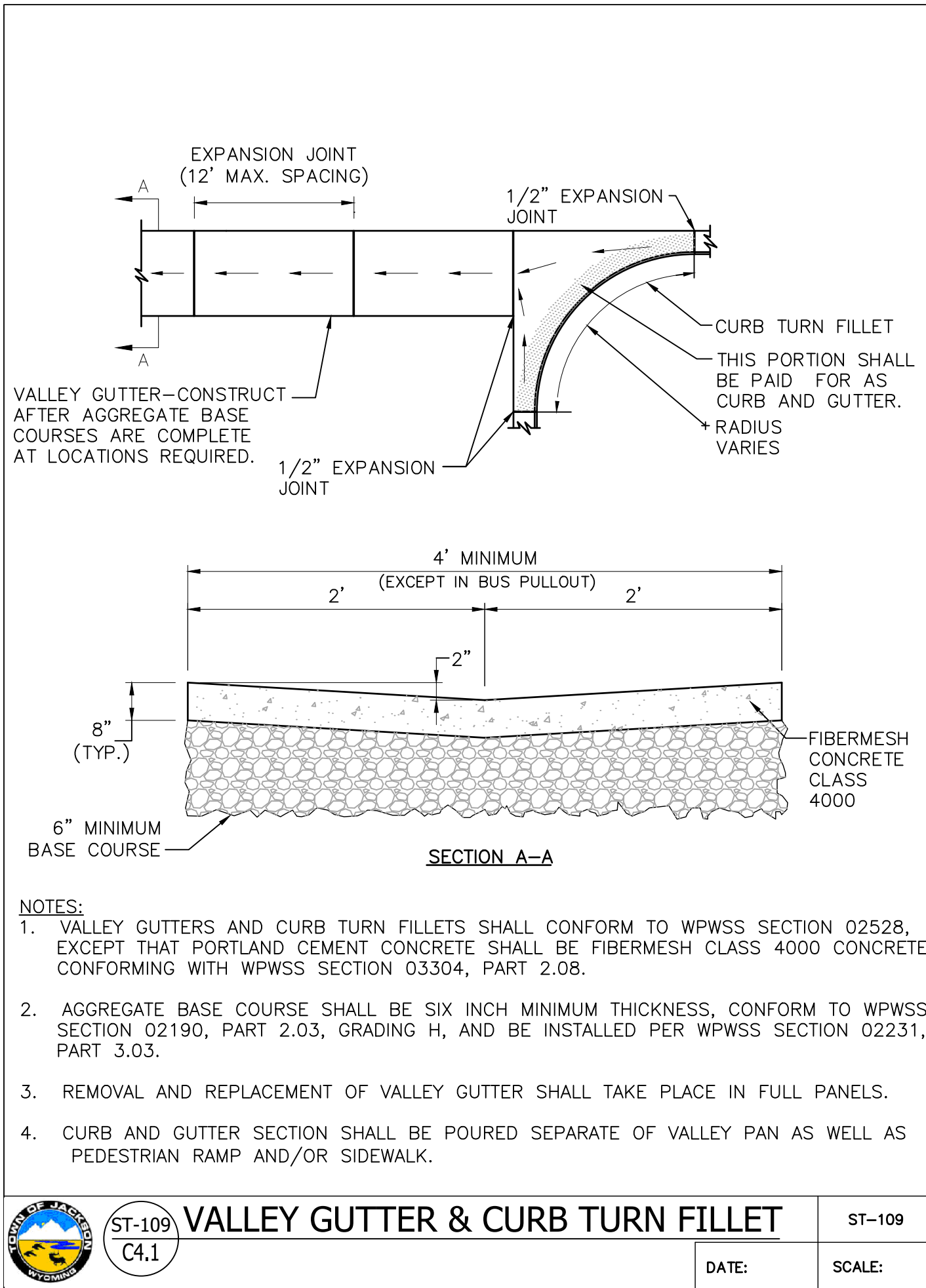
DEVELOPMENT PLAN
NOT FOR CONSTRUCTION

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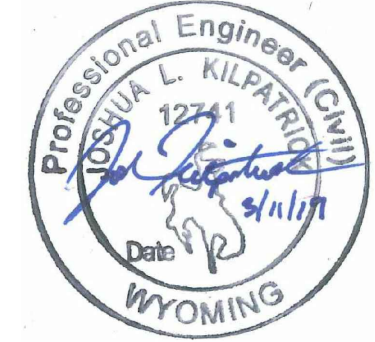
REGISTRATION 	
CLIENT BASE CAMP LLC c/o COHEN & ASSOCIATES LLC 46 RICHMOND AVE, SUITE 105 WESTPORT, CT 06880 203.227.2390	
ARCHITECT MERGE ARCHITECTS, INC. 332 CONGRESS ST, FLOOR 6 BOSTON, MA 02210 617.670.0265	
LANDSCAPE ARCHITECT AGROSTIS, INC. 1130 MARLE WAY, SUITE 2C PO BOX 3074 JACKSON, WY 83001 (307) 413-1683	
CIVIL/STRUCTURAL ENGINEER NELSON ENGINEERING 430 CACHE ST, PO BOX 1599 JACKSON, WY 83001 (307) 733-2087	
MERGE ARCHITECTS INC SOUTH GLENWOOD APARTMENTS 640-650 SOUTH GLENWOOD ST JACKSON, WY 83001	
03/13/19	DEVELOPMENT PLAN
JOB NO.: A/E: 17261 / 17-296-02	
SCALE: AS INDICATED	
DATE: 3/13/19	
DRAWING TITLE	
GRADING PLAN	
SHEET NO.	

C4.0

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REGISTRATION



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203.227.2390

ARCHITECT

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617.670.0265

LANDSCAPE ARCHITECT

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(307) 415-1683

CIVIL/STRUCTURAL ENGINEER

NELSON ENGINEERING
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(307) 733-2087

MERGE ARCHITECTS INC

SOUTH GLENWOOD APARTMENTS

640-650 SOUTH GLENWOOD ST
JACKSON, WY 83001

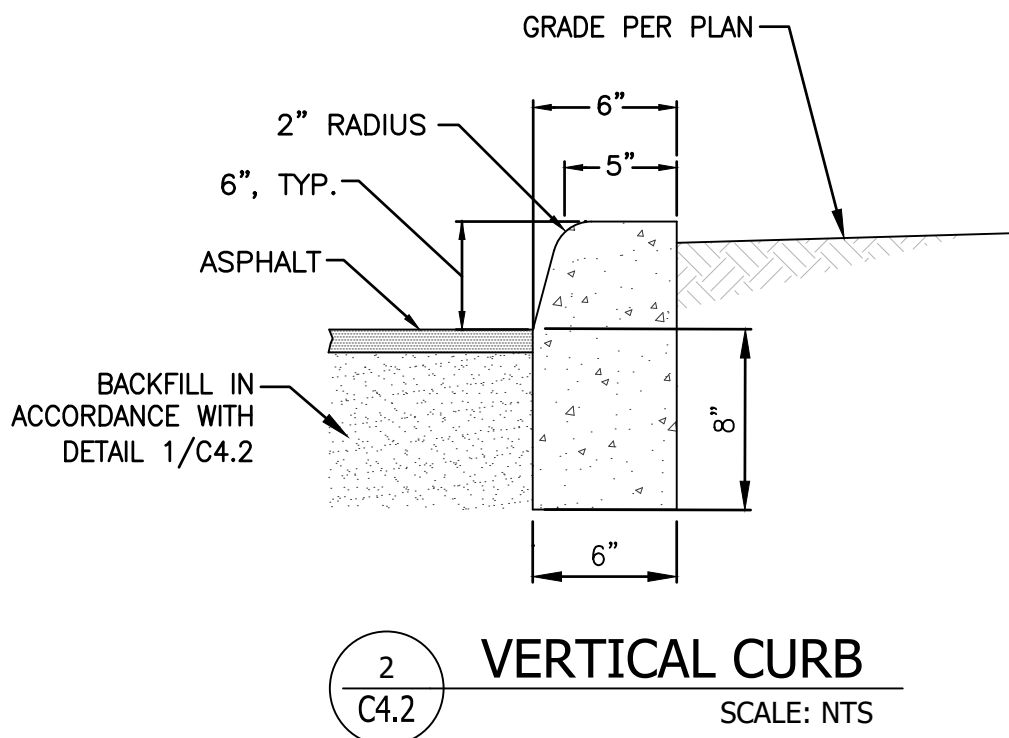
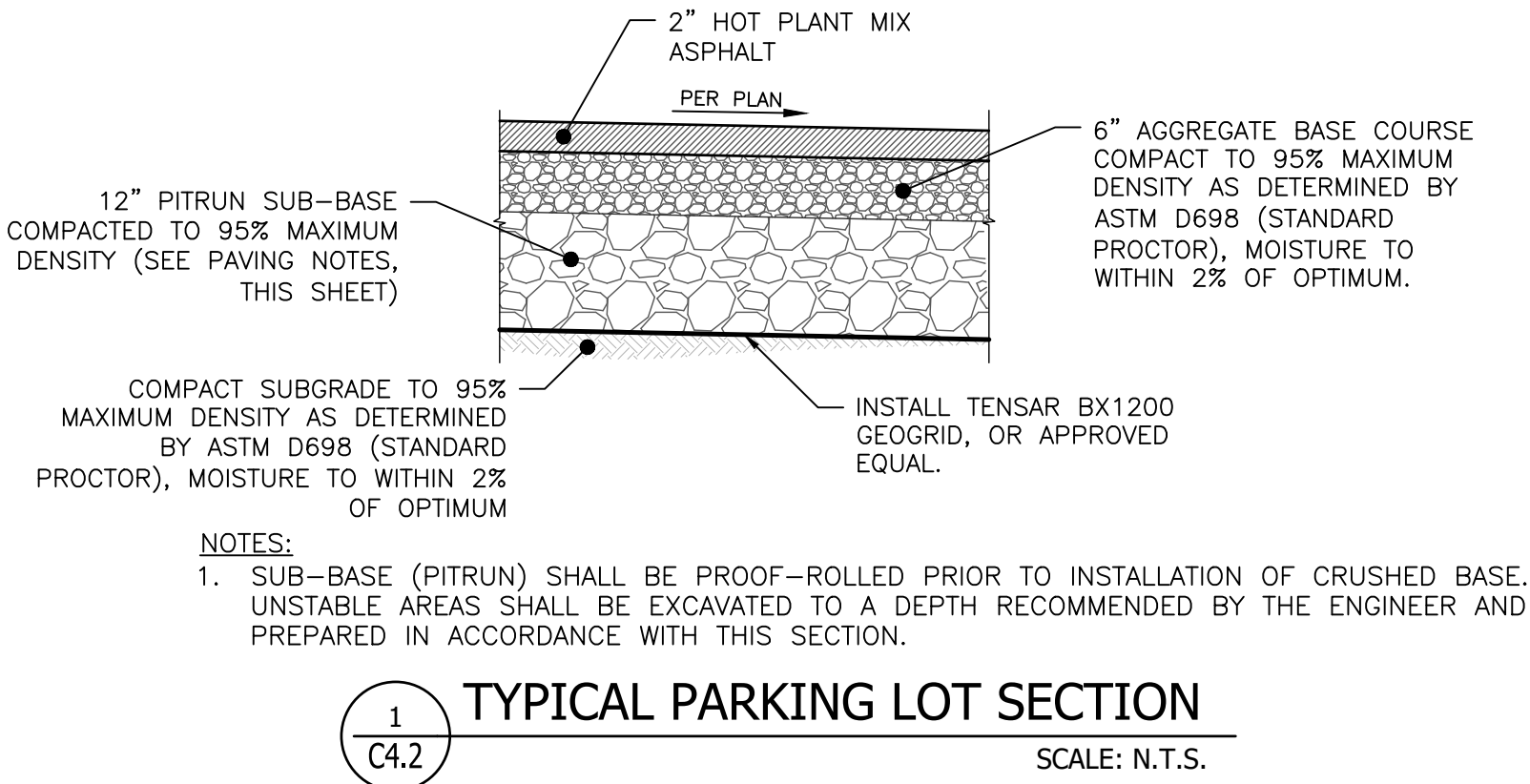
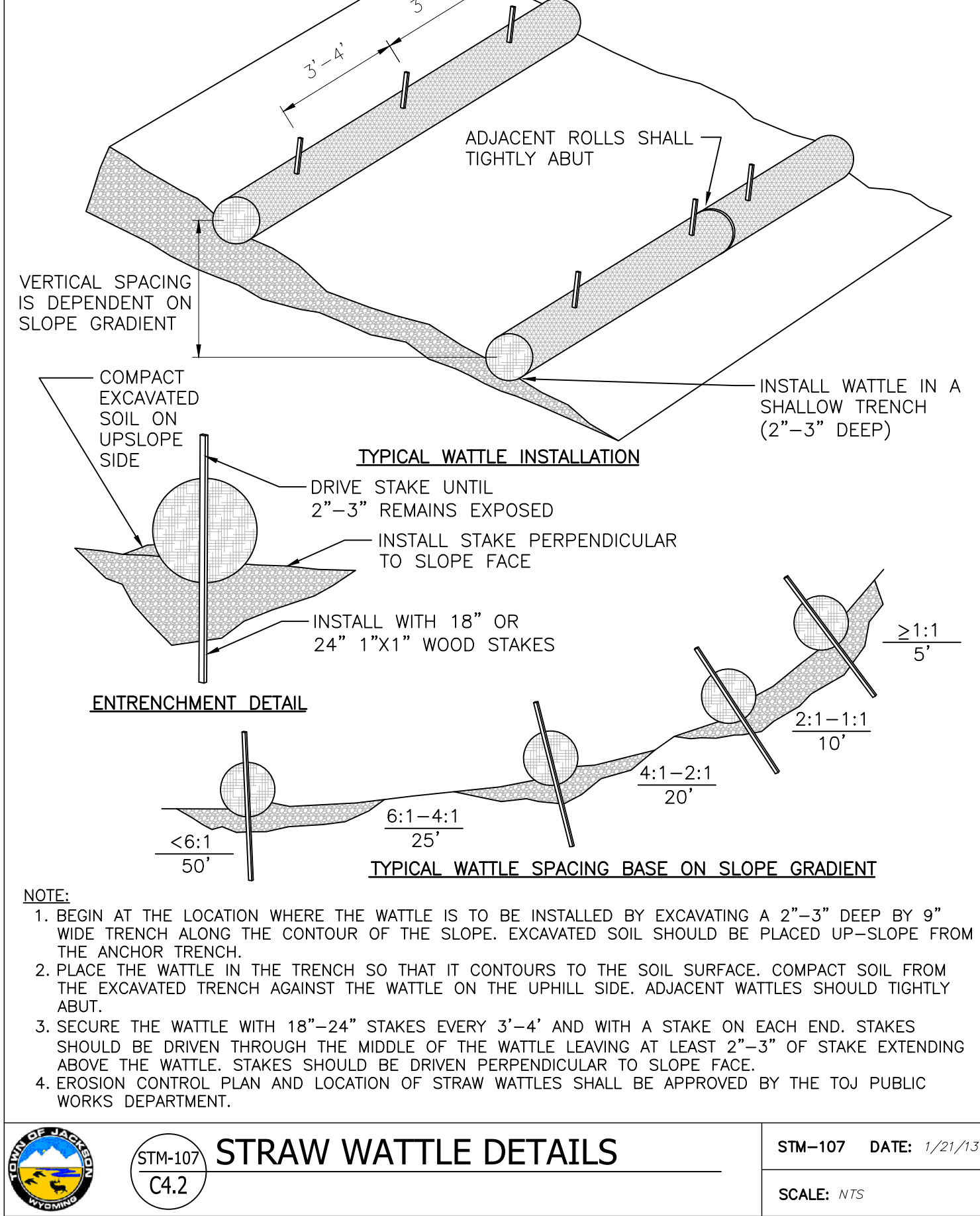
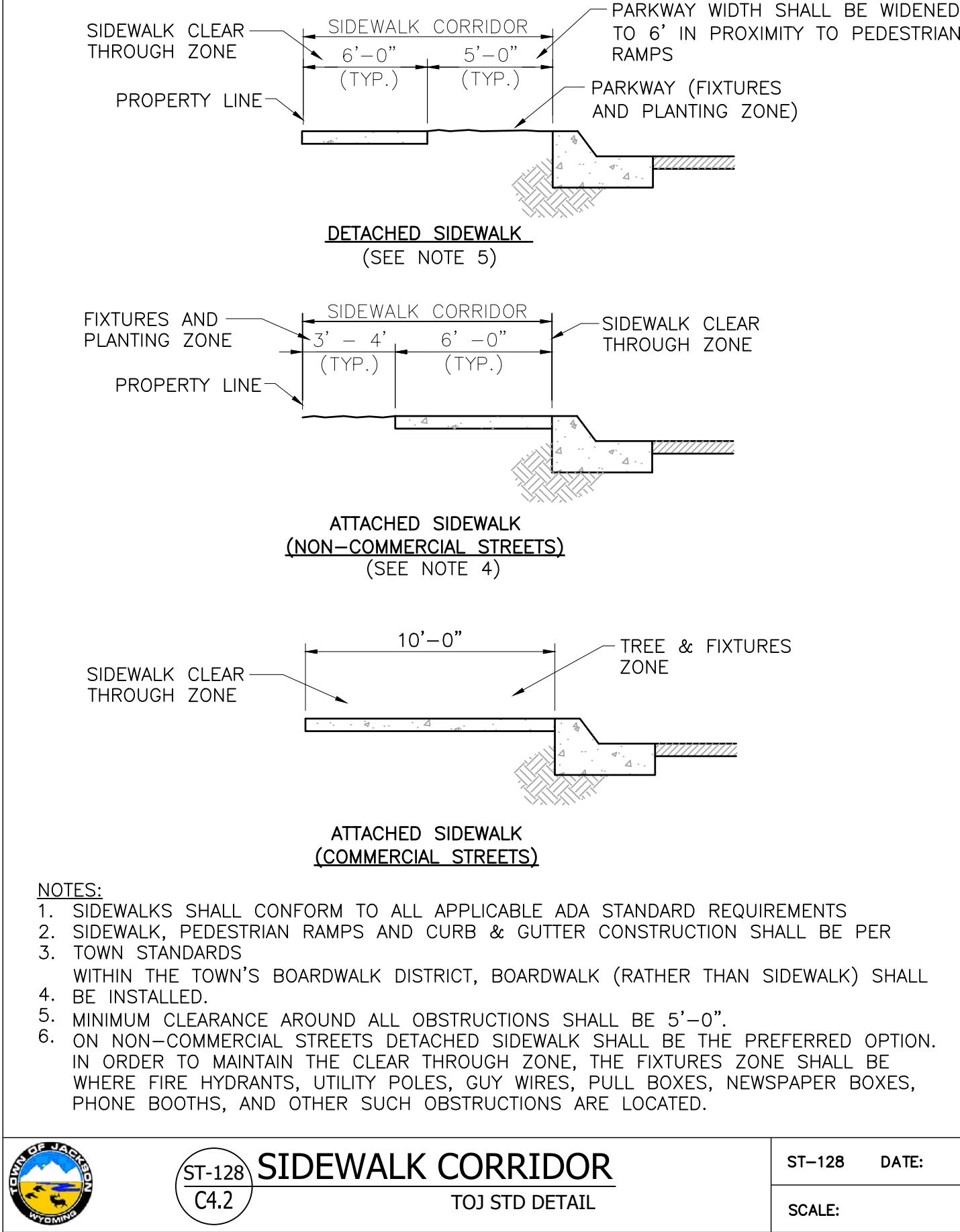
03/13/19	DEVELOPMENT PLAN
JOB NO.:	A/E: 17261 / 17-296-02
SCALE:	AS INDICATED
DATE:	3/13/19
DRAWING TITLE	
GRADING DETAILS	
SHEET NO.	

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DEVELOPMENT PLAN
NOT FOR CONSTRUCTION

C4.1

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CIVIL/STRUCTURAL ENGINEER
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JOB NO.: A/E: 17261 / 17-296-02

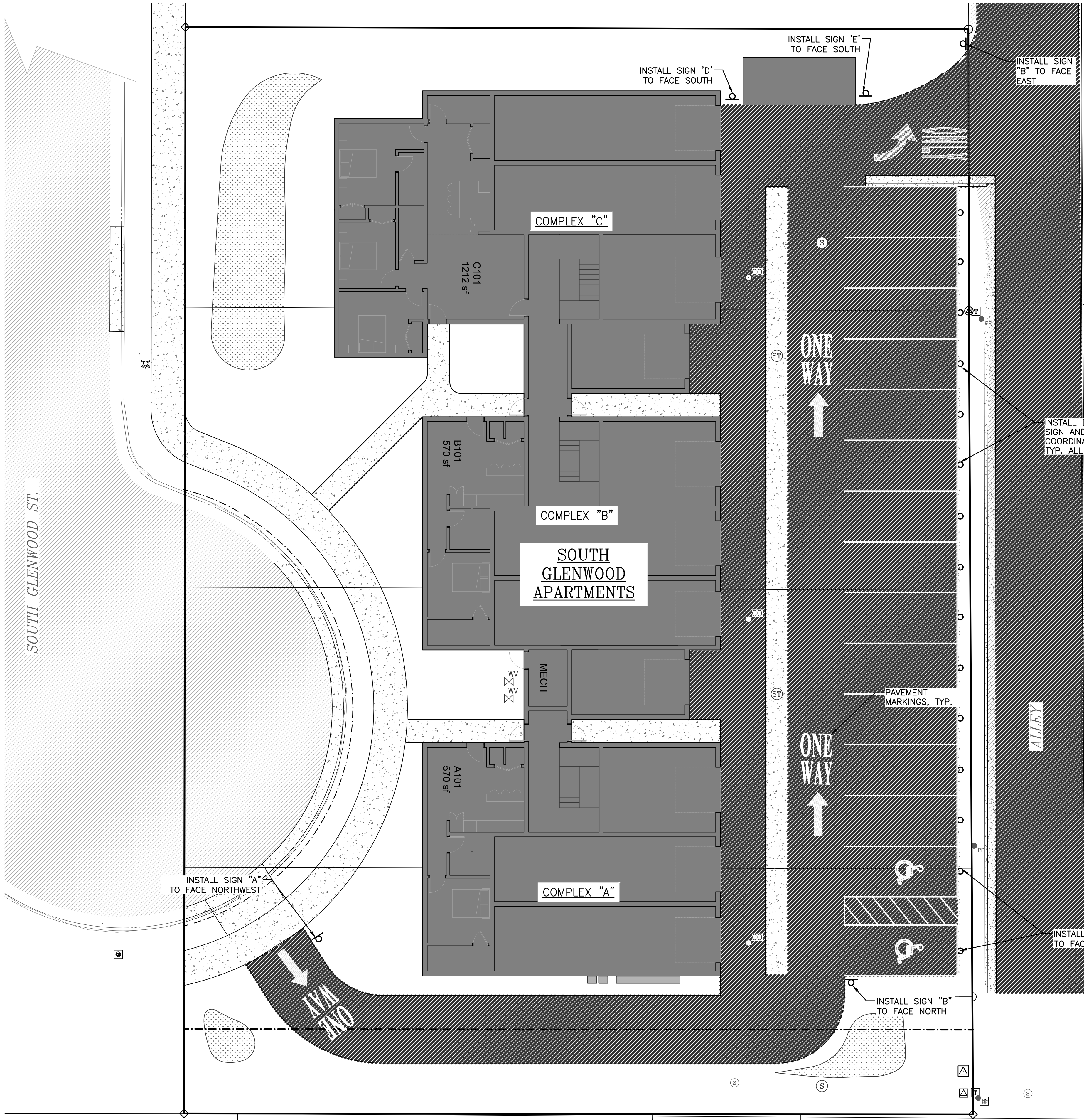
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DATE: 3/13/19

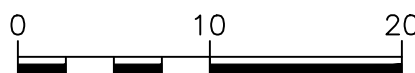
DRAWING TITLE
GRADING DETAILS

SHEET NO.
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SIGN & STRIPING PLAN
SCALE: 1" = 10' (24X36)



: A



: B



: C

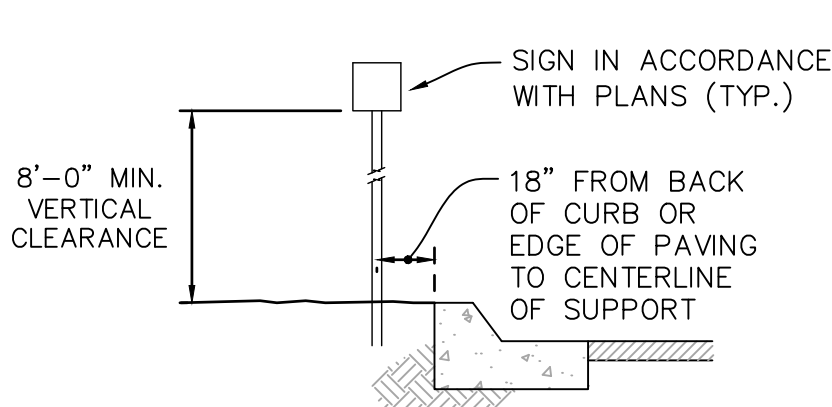


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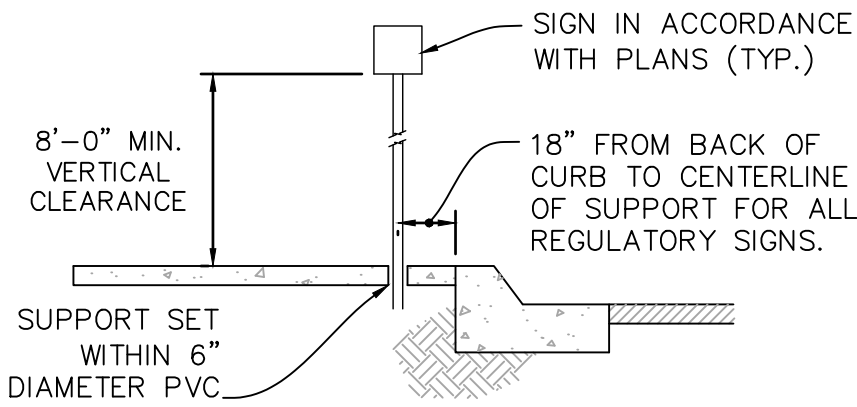


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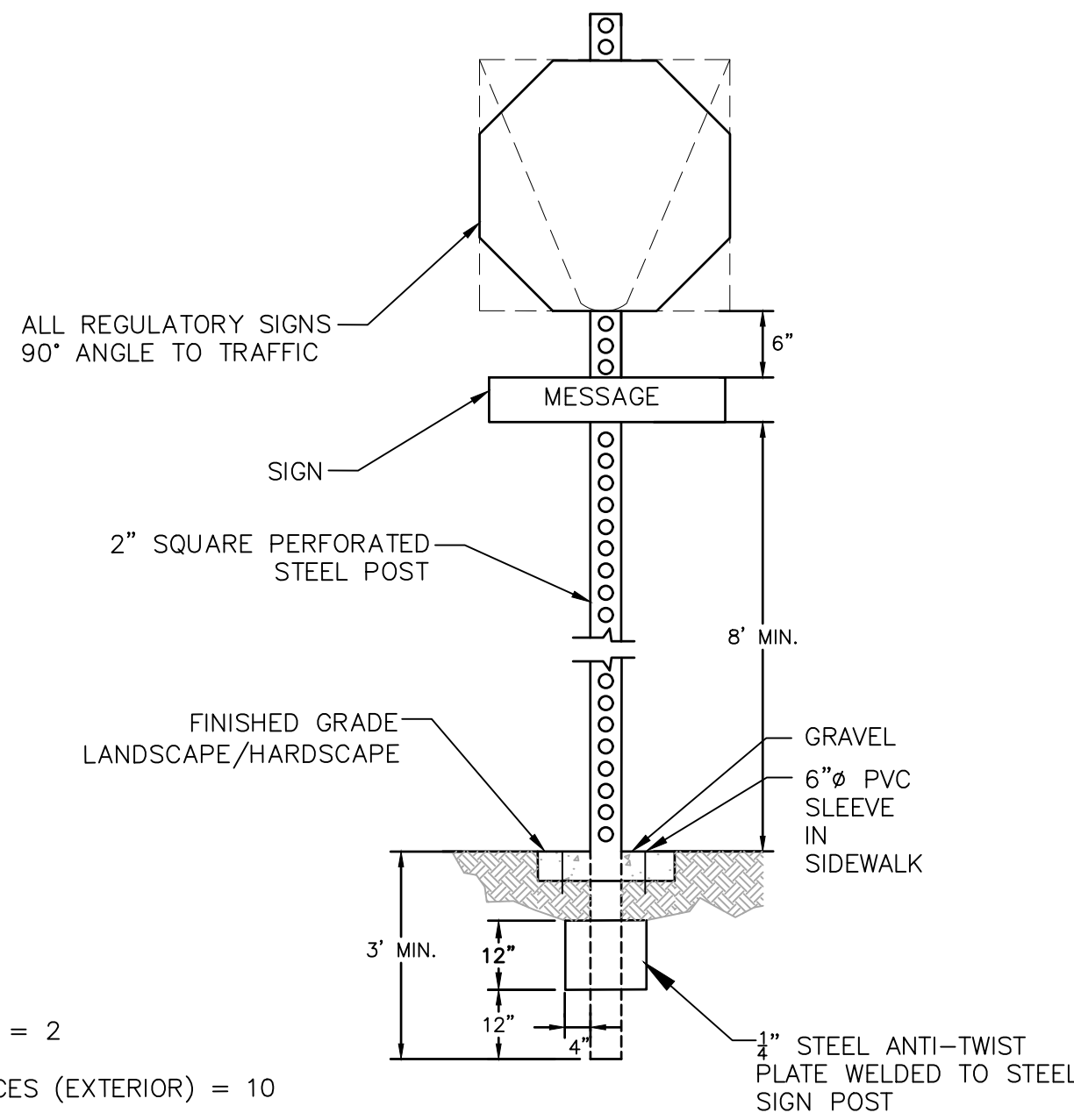
SIGN DESIGNATIONS



TYPICAL PLACEMENT



CONTIGUOUS SIDEWALK
ALTERNATIVE PLACEMENT



TYPICAL INSTALLATION

PARKING SUMMARY:

- ADA PARKING SPACES = 2
- TENANT PARKING SPACES (EXTERIOR) = 10
- TENANT PARKING SPACES (GARAGE) = 17
- GUEST PARKING = 3
- TOTAL NUMBER OF PARKING SPACES = 32

SIGN SCHEDULE

SIGN TYPE	DESCRIPTION	DIMENSIONS	OFFSET*(BOC)	QUANTITY	REMARKS
A	ONE WAY	18"X24"	1.5'	2	NONE
B	DO NOT ENTER	18"X18"	1.5'	2	NONE
C	DISABILITY PARKING	12"X18"	1.5'	2	NONE
D	NO PARKING (ARROW RIGHT)	12"X18"	1.5'	1	NONE
E	NO PARKING (ARROW LEFT)	12"X18"	1.5'	1	NONE

NOTES:

- SIGN PLACEMENT LOCATIONS SHALL BE VERIFIED WITH ARCHITECT IN THE FIELD PRIOR TO INSTALLATION.
- ALL REGULATORY SIGNS SHALL BE 0.125 INCH THICK SHEET ALUMINUM.
- SIGN FACE MATERIAL SHALL BE MIN. ENGINEER GRADE TAPES (REFLECTIVE).
- MATERIALS FOR SIGNS SHALL MEET WYDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION 2003 REQUIREMENTS.
- MINIMUM EMBEDMENT OF ANCHOR POST SHALL BE 3.0' FROM FINISHED GROUND LEVEL.

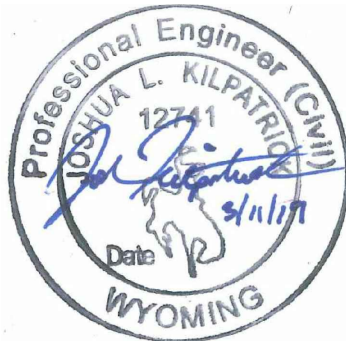
SIGNAGE PLACEMENT & INSTALLATION DETAIL
SCALE: NTS

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C5.0

DEVELOPMENT PLAN
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REGISTRATION



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203.227.2390

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617.670.0265

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JACKSON, WY 83001
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MERGE ARCHITECTS INC

SOUTH GLENWOOD APARTMENTS

640-650 SOUTH GLENWOOD ST
JACKSON, WY 83001

03/13/19

DEVELOPMENT PLAN

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JOB NO.: A/E: 17261 / 17-296-02

SCALE: AS INDICATED

DATE: 3/13/19

DRAWING TITLE

SIGN & STRIPING PLAN

SHEET NO.

C5.0



Legend	
Existing	Property Line
Adjacent Property Line	
Building Envelope	
Easement	
Edge of Pavement	
Survey Monument	
Electric Transformer	
Telephone/Broadband	
TV Pedestal	
Sewer Manhole	
Sewer Cleanout	
Water Service / Well	
Buried Water Line	
Buried Sewer Line	
Irrigation Main Line	

"ALTERNATIVE" TREE & SHRUB SCHEDULE

KEY	SCIENTIFIC NAME	COMMON NAME	SIZE	QUANTITY
Trees				
Pt	Populus tremuloides	Quaking Aspen	3" Cal.	11
Fp	Fraxinus pennsylvanica	Patmore Ash	6" Cal.	24
Pp	Picea pungens	Spruce	8' B&B	10
			14' B&B	3
Multi-stemmed Tree or Large Shrub				
	Amelanchier alnifolia	Serviceberry	6-8' B+B	12
Shrubs, groundcovers and perennial				
	Varies	Isanti Dogwood, Snowberry	5 Gal.	92
	Varies	Native Grass Reclamation	Sod	7,547 sf
		Washed Rock	1" minus	334 sf

COST ESTIMATE FOR LANDSCAPE BOND

KEY	TYPE	QUANTITY	EACH	TOTAL
	3" caliper canopy tree	11	\$ 400	\$ 4,400
	6" caliper canopy tree	24	\$ 900	\$ 21,600
	3" caliper canopy tree	12	\$ 400	\$ 4,800
	8' high evergreen tree	10	\$ 450	\$ 4,500
	14' high evergreen tree	3	\$ 840	\$ 2,520
	6'-8' large shrub or multi-stem	12	\$ 275	\$ 3,300
	#5 container shrub	92	\$ 65	\$ 5,980
not shown	Irrigation	7,547 sf	\$ 1.10 / sf	\$ 8,302
Subtotal				\$ 55,402
125% bond				\$ 69,252

Reclamation Methods

- Grade all areas as shown on the plan while providing for smooth transitions to existing grade. Scarify all compacted areas to a depth of 4" to provide an adequate substrate for plant growth. Remove rocks and other material greater than 3" in diameter.
 - All disturbed areas to receive seed shall have a minimum of 3" of clean topsoil applied prior to seeding or planting.
 - Prior to placing topsoil, the area to receive seed shall be raked or tilled to ensure adequate bonding between subgrade and the topsoil layer.
 - Seed shall be spread at the rate indicated below and between the dates of October 15th and May 15th. Use approved mechanical broadcasting methods to evenly distribute the seed mix across the surface to be seeded. DO NOT apply seed during high wind conditions and take care not to disturb existing improvements. After seeding is applied, rake the surface of the soil to ensure good contact between seed and soil particles.
 - The seed used in the reclamation mix shall be fresh, pure live seed (PLS), of the most recent crop and mixed in the quantities shown below.
- | Botanical Name | Common Name | #s PLS/Acre |
|-------------------------|-----------------------|-----------------|
| Bromus marginalis | Mountain Brome | 9.0 |
| Elymus trachicaulis | Slender Wheatgrass | 5.0 |
| Festuca idahoensis | Idaho Fescue | 3.0 |
| Pascopyrum smithii | Western Wheatgrass | 7.0 |
| Pseudoroegneria spicata | Blue Bunch Wheatgrass | 6.0 |
| TOTAL = | | 30.0 |
| | | pounds PLS/Acre |
- Fertilizer shall be 10-6-4, or approved alternate, and shall be applied at a rate of ten pounds (10 lbs) per one thousand square feet (1,000 sf).

Site Calculations

- Application is under former zone UR-PUD
- Office Use Permitted Overlay
- Gross Site Area is 20,038 sf
- The required LSR, per UR-PUD application is 0.30 or 7,541 sf. This plan shows 7,547 sf.
- The required Plant Unit is (1) per unit and (1) per 12 parking stalls. Therefore, a total of (23) Plant Units are required.
- Landscape areas beyond the property line (total 674 sf) are NOT INCLUDED in this calculation.
- Gravel "drip strip" around building perimeter (total 334 sf) is INCLUDED in this calculation.
- Property owner will maintain landscaping to the standard of the intent of this development plan - including Glenwood Street right of way.

Landscape Plan Notes

- Per Town of Jackson LDR Section 5.5.3.E.1, we credited (2) existing mature spruce trees (approx. 40' tall) for a total of (2) plant units. The proposed Plant Unit total is (21).
- This plan shows a combination of trees and shrubs that is based on a valuation interpretation of the standard plant units. See "Alternative" schedule above.

1130 maple way #2C
po box 3074
jackson, wy 83001
v: 307.413.5123
info@agrostisinc.com

agrostis, inc.

landscape architecture
land planning

S. Glenwood Apts.

640-650 S. Glenwood Street

Lots 5-6-7, Block 4, Karns-2
Town of Jackson, Wyoming
Project # 1818

LANDSCAPE ARCHITECT
ROBERT J. SNIDER
LA-01108
Date: 8/18/19
STATE OF WYOMING

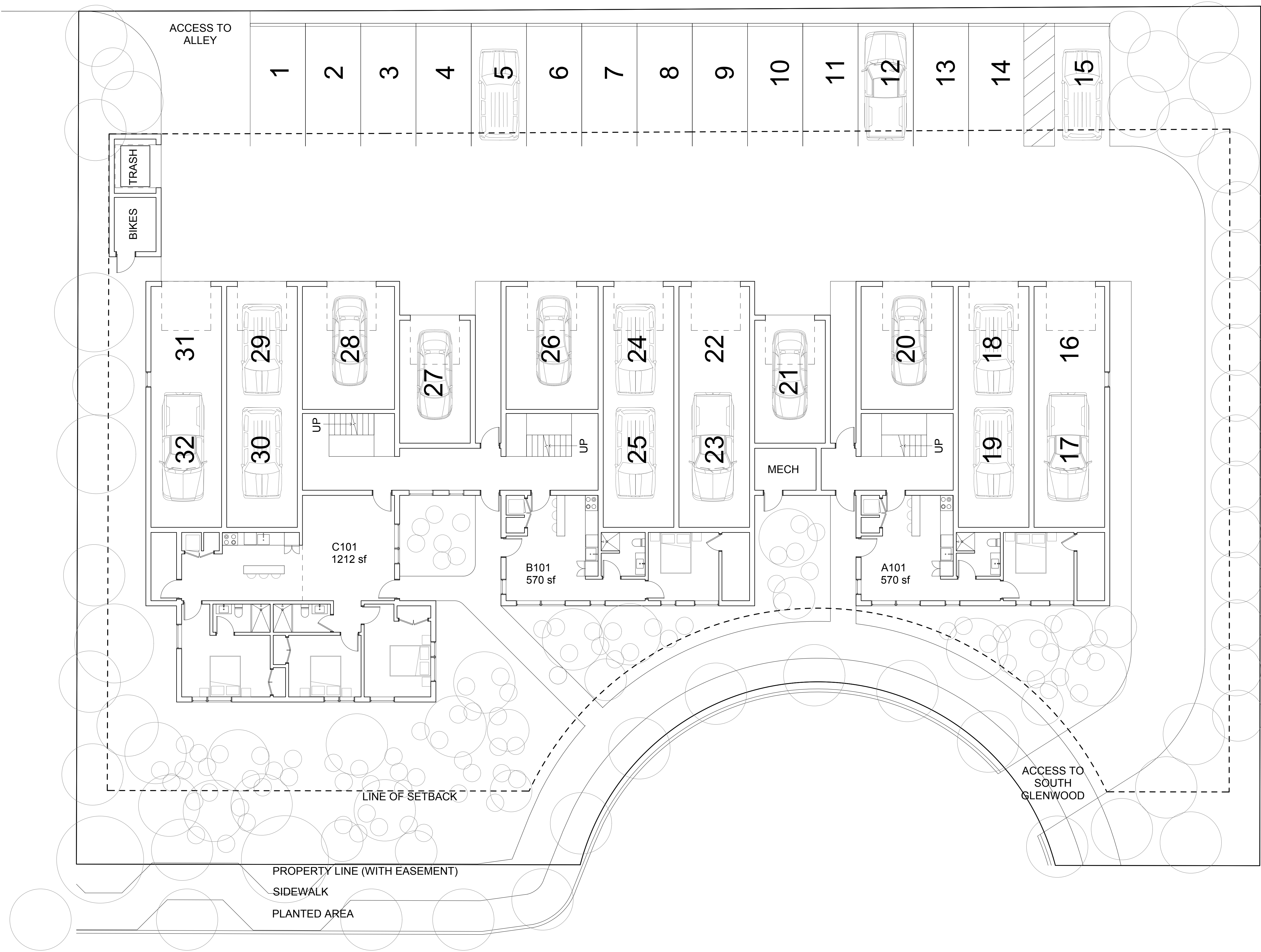
Revisions

#	Date	Description
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-	-	-
-	-	-
-	-	-
-	-	-

0 10 20
scale: 1" = 10'

Final Development
Permit
--
Landscape Plan

L1.1



LEVEL 1 PLAN

REGISTRATION



CLIENT
BASE CAMP LLC C/O COHEN & ASSOCIATES LLC
49 RICHMONDVILLE AVE, SUITE 105
WESTPORT, CT 06880
(203) 227-2590

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MEP ENGINEER

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MERGE ARCHITECTS ^{INC}
SOUTH GLENWOOD APARTMENTS
640-650 SOUTH GLENWOOD ST
JACKSON, WY 83001

03/15/19 DEVELOPMENT PLAN

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JOB NO.: 17261

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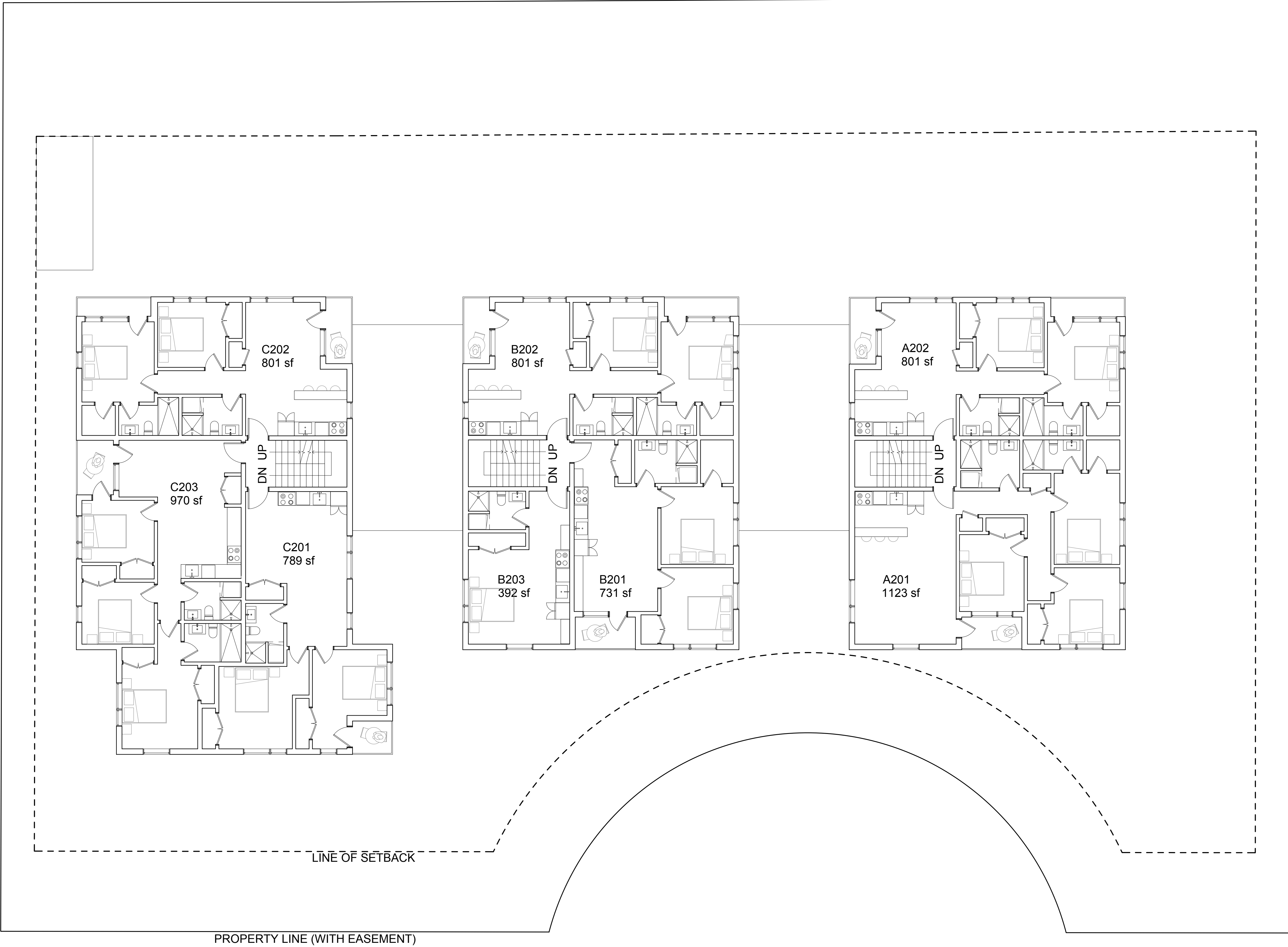
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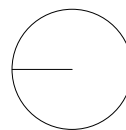
LEVEL 1 PLAN

SHEET NO.

A1.1



LEVEL 2 PLAN



REGISTRATION



CLIENT
BASE CAMP LLC D/O COHEN & ASSOCIATES LLC
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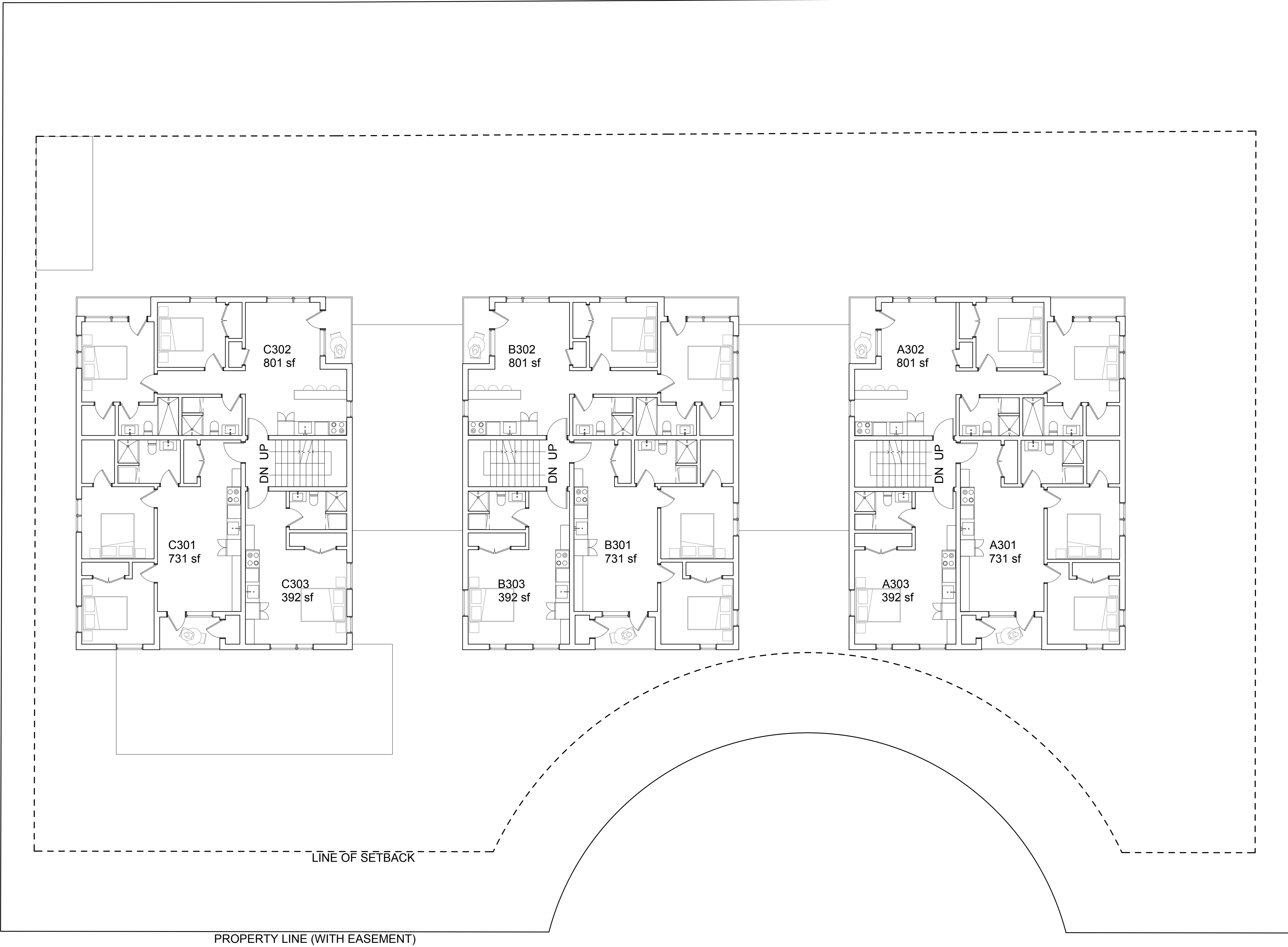
DATE: 03/15/19

DRAWING TITLE

LEVEL2 PLAN

SHEET NO.

A1.2



LEVEL 3 PLAN

REGISTRATION



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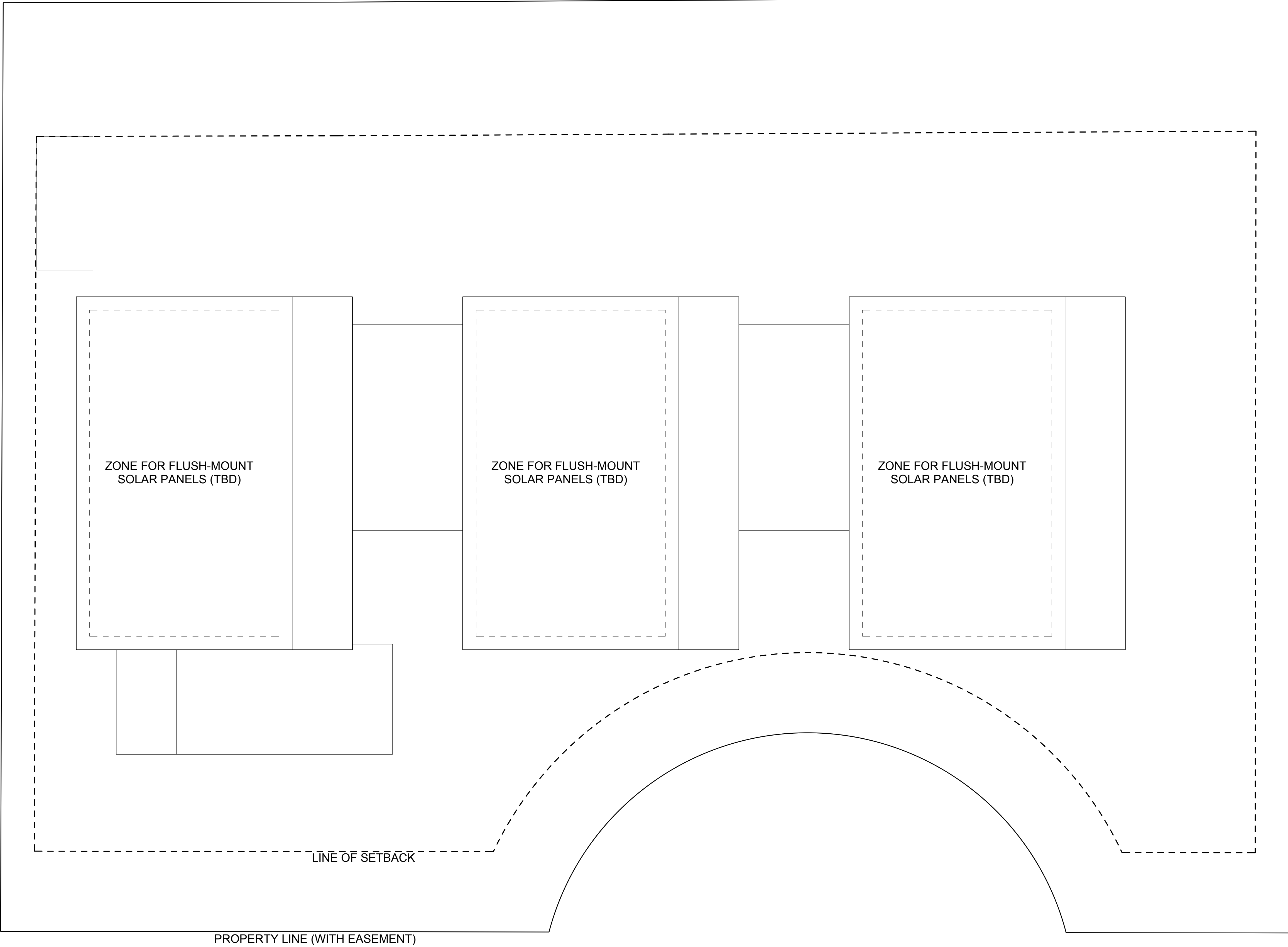
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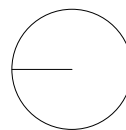
LEVEL 3 PLAN

SHEET NO.

A1.3



LEVEL 4 PLAN



REGISTRATION



CLIENT
BASE CAMP LLC C/O COHEN & ASSOCIATES LLC
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SCALE: 1/8" = 1'-0"

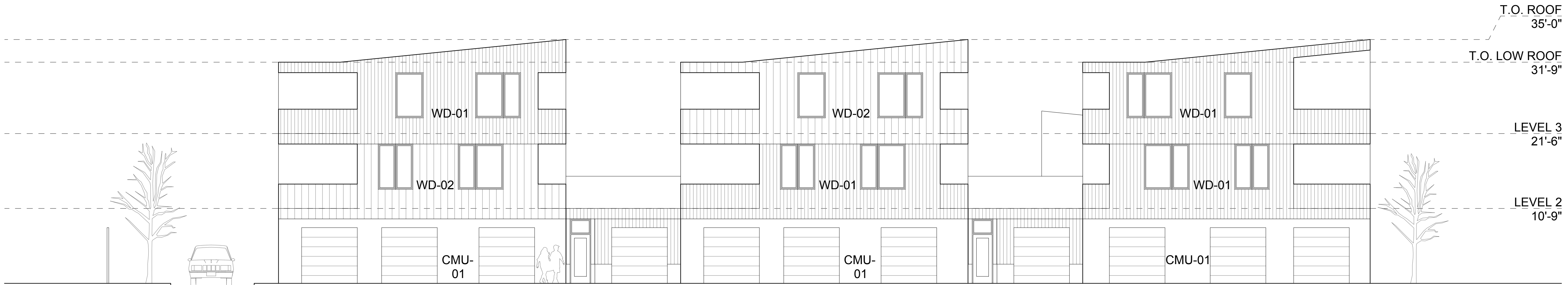
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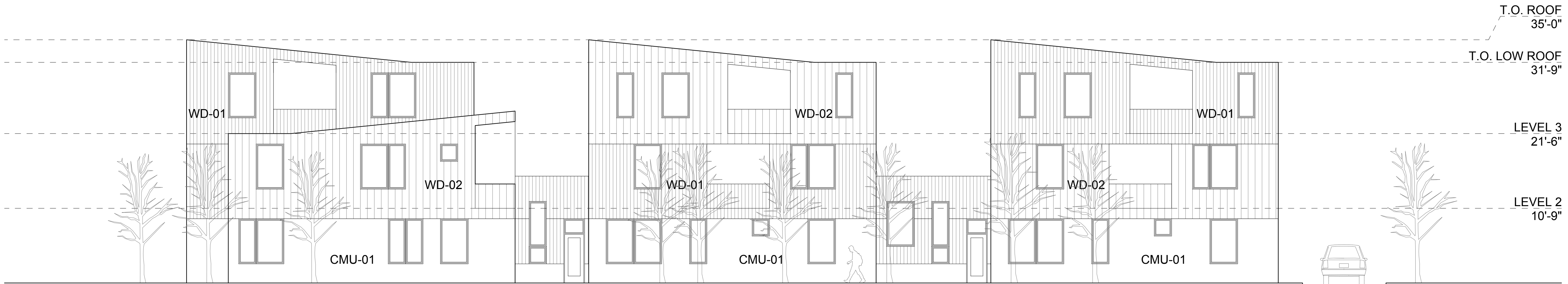
ROOF PLAN

SHEET NO.

A1.4



EAST ELEVATION



WEST ELEVATION

KEY	DESCRIPTION	PRODUCT	SIZE	FINISH / COLOR / ETC
CMU-01	CONCRETE MASONRY UNIT	STANDARD MODULE	TBD	(CONSIDERING CAST-IN-PLACE CONCRETE)
WD-01	CEDAR	SHIPLAP SIDING	4" WIDE FACE	1 COAT OF FULL-CHAR WOOD STAIN & 1 COAT OF HALF-CHAR WOOD STAIN
WD-02	CEDAR	SHIPLAP SIDING	6" WIDE FACE	1 COAT OF FULL-CHAR WOOD STAIN & 1 COAT OF HALF-CHAR WOOD STAIN

REGISTRATION



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MERGE ARCHITECTS INC
SOUTH GLENWOOD APARTMENTS
640-650 SOUTH GLENWOOD ST
JACKSON WY 83001

03/15/19 DEVELOPMENT PLAN

THE CONTRACTOR IS RESPONSIBLE
FOR MATERIALS, DETAILS AND
ACCURACY, FOR ALL QUANTITIES AND
DIMENSIONS, FOR SELECTING
FABRICATION PROCESSES, FOR
TECHNIQUES OF ASSEMBLY, FOR
PERFORMING WORK IN A SAFE MANNER,
AND FOR COORDINATING WORK WITH
THAT OF ALL TRADES

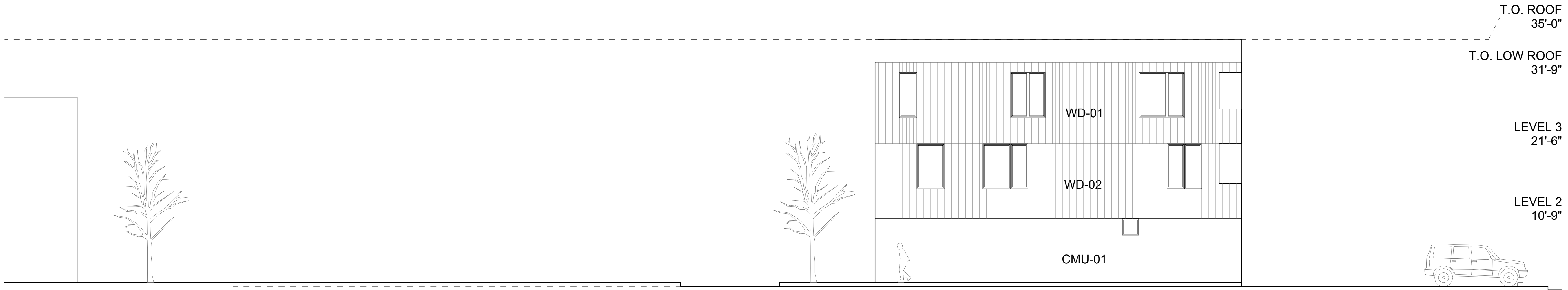
JOB NO.:	17261
SCALE:	1/8" = 1'-0"
DATE:	03/15/19

DRAWING TITLE

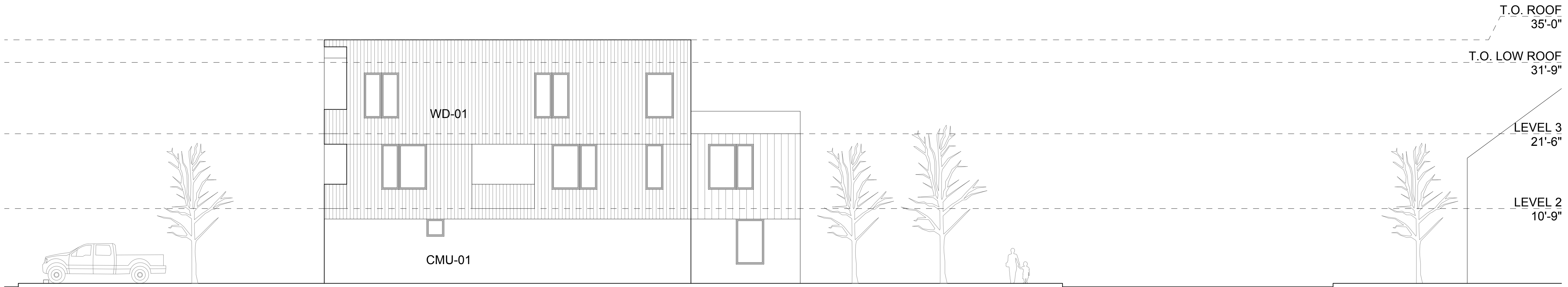
ELEVATIONS

SHEET NO.

A2.1



SOUTH ELEVATION



NORTH ELEVATION

KEY	DESCRIPTION	PRODUCT	SIZE	FINISH / COLOR / ETC
CMU-01	CONCRETE MASONRY UNIT	STANDARD MODULE	TBD	(CONSIDERING CAST-IN-PLACE CONCRETE)
WD-01	CEDAR	SHIPLAP SIDING	4" WIDE FACE	1 COAT OF FULL-CHAR WOOD STAIN & 1 COAT OF HALF-CHAR WOOD STAIN
WD-02	CEDAR	SHIPLAP SIDING	6" WIDE FACE	1 COAT OF FULL-CHAR WOOD STAIN & 1 COAT OF HALF-CHAR WOOD STAIN

REGISTRATION



CLIENT
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ARCHITECT
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LANDSCAPE ARCHITECT
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MERGE ARCHITECTS^{INC}
SOUTH GLENWOOD APARTMENTS
640-650 SOUTH GLENWOOD ST
JACKSON, WY 83001

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JOB NO.:	17261
SCALE:	1/8" = 1'-0"
DATE:	03/15/19

DRAWING TITLE

ELEVATIONS

SHEET NO.

A2.2



ELEVATIONAL VIEW FROM SOUTH GLENWOOD ST

REGISTRATION



CLIENT
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STRUCTURAL ENGINEER
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MEP ENGINEER
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MERGE ARCHITECTS^{INC}
SOUTH GLENWOOD APARTMENTS
640-650 SOUTH GLENWOOD ST
JACKSON, WY 83001

03/15/19 DEVELOPMENT PLAN

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AND FOR COORDINATING WORK WITH
THAT OF ALL TRADES

JOB NO.: 17261

SCALE:

DATE: 03/15/19

DRAWING TITLE

PERSPECTIVE VIEW

SHEET NO.

A9.0



OBLIQUE VIEW FROM SOUTH GLENWOOD ST

REGISTRATION



CLIENT

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JACKSON, WY 83001
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MERGE ARCHITECTS^{INC}

SOUTH GLENWOOD APARTMENTS

640-650 SOUTH GLENWOOD ST
JACKSON, WY 83001

03/15/19 DEVELOPMENT PLAN

THE CONTRACTOR IS RESPONSIBLE FOR MATERIALS, DETAILS AND ACCURACY, FOR ALL QUANTITIES AND DIMENSIONS, FOR SELECTING FABRICATION PROCESSES, FOR TECHNIQUES OF ASSEMBLY, FOR PERFORMING WORK IN A SAFE MANNER, AND FOR COORDINATING WORK WITH THAT OF ALL TRADES

JOB NO.: 17261

SCALE:

DATE: 03/15/19

DRAWING TITLE

PERSPECTIVE VIEW

SHEET NO.

A9.1



VIEW FROM PARKING AREA

REGISTRATION



CLIENT
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MERGE ARCHITECTS INC
SOUTH GLENWOOD APARTMENTS
640-650 SOUTH GLENWOOD ST
JACKSON, WY 83001

03/15/19 DEVELOPMENT PLAN

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JOB NO.: 17261

SCALE:

DATE: 03/15/19

DRAWING TITLE

PERSPECTIVE VIEW

SHEET NO.

A9.2

South Glenwood Apartments

640 & 650 S. GLENWOOD / JACKSON, WY



FINAL DEVELOPMENT PLAN

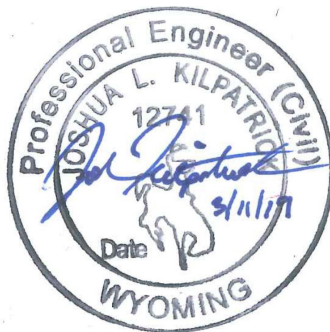
ENGINEER'S DESIGN REPORT

SUBMITTED TO:

TOWN OF JACKSON

PLANNING DEPT.

TOJ PROJ. #: P17-200



NELSON ENGINEERING
JACKSON, WY

MARCH 13TH, 2019

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APPENDICIES

APPENDIX I – WATER SUPPLY CALCULATIONS
APPENDIX II – WASTEWATER CALCULATIONS
APPENDIX III – VEHICAL TURNING ANALYSIS
APPENDIX IV – STORMWATER RUNOFF

INTRODUCTION

This engineering report provides design and development information as it relates to the South Glenwood Apartments (SGA) Final Development Plan (FDP). Topics addressed include water, wastewater and misc. utilities; vehicle access & parking; pedestrian access; traffic impact analysis; grading and erosion control; and stormwater and construction management. The conditions of approval are discussed below, and further throughout this report, as presented in the December 4th, 2018 Sketch Plan approval letter from the Town addressing P17-200.

Condition #2: *The applicant shall design the sidewalks and street landscaping on the east side of South Glenwood to Snow King Avenue to meet the guidelines for pedestrian frontages in the Community Streets Plan and as noted in this staff report. This includes a 5' attached landscape strip with approved tree plantings properly spaced and 6' detached sidewalk.*

In accordance with drawing C4.0, a 6-ft wide detached sidewalk with 5-ft wide green space will be provided.

Condition #3: *The applicant shall either install a barrier/fence along the alley parking spaces OR shall revise the parking space dimensions so that they are at minimum 22 feet deep.*

Drawing C5.0, describing traffic circulation/vehicle movement, has been prepared to describe vehicle egress to the proposed apartment complex via. the S. Glenwood cul-de-sac, and egress via. the alley north to Snow King Avenue. In accordance with the Town Engineer, the applicant is planning for a vertical curb along the east side of the proposed parking lot, 20-ft parking spaces and 22-ft drive aisle.

In addition, curb and gutter is proposed on the west side of the alley to direct alley drainage to the detention area and providing an approximate 4-ft wide green strip between parking and the alley curb. The green strip will provide space for existing utilities including power poles and utility boxes. The original proposal containing parking bumpers is not preferred due to increased maintenance associated with snow-plowing operations.

The LDRs require parking spaces that are 22-ft deep where access is “directly” from an alley. The proposed development has a dedicated parking lot where cars do not turn “directly” from the alley to park; therefore, parking has been shown to meet the standard parking space length of 20-ft.

Although LDRs require a minimum 24-ft drive aisle, Town Planning sees this as minor change to the Sketch Plan and they are confident the site will function from a vehicle movement standpoint. A turning/parking analysis was completed and has been included as Exhibit A, in Appendix III of this report to support the Town’s recommendation.

Condition #5: *The applicant shall provide a Traffic Analysis & Vehicle movement plan consistent with Engineering Department's comments in the department reviews.*

A traffic analysis has been completed and is described in Section 2.4 of this report. The existing and forecasted post-development level of service demonstrates there is minimal impact to the level of service at Snow King intersection with Glenwood Street, Cache Street, and the alley between Glenwood and Cache Streets as a result of the S. Glenwood Apartments development.

Condition #7: *The applicant shall revise the site plan and floor plan to provide pedestrian access from the parking/garage area to the northwestern most unit on the ground level.*

In accordance with drawings submitted, the site and floor plan has been revised to provide pedestrian access from the parking/garage area to the northwest most unit on the ground level.

Condition #8: *The applicant shall pave the alley to the satisfaction of the Public Works department as stated in the department reviews.*

In accordance with drawing C1.1, the applicant is prepared to pave the remaining portion of the alley extending from the south boundary of Lot 7 to Snow King Avenue. The existing alley is 20-ft in width with existing pavement approximately 16-ft in width. New paving will be generally 18-ft in width (centered in the alley) in accordance with TOJ comments to “match the existing pavement limits.” In addition, curb and gutter is proposed along the east edge of the alley and adjacent to the proposed parking lot. The road section adjacent to the parking lot has been shifted to the east to accommodate a green space for existing above ground utilities (power poles and utility boxes); the road section here is only 17-ft in width and abuts the east alley boundary.

PROJECT SITE & DESCRIPTION

EXISTING SITE

The existing site consists of Lots 4, 5, 6 and 7 of BLK. 4, Karns 2nd Addition and addressed at 640 and 650 S. Glenwood Street. Each lot is roughly 40-ft by 150 ft (6,000 s.f.). Access to the lots is from S. Glenwood St. to the west and the gravel alley to the east. Existing utilities include an 8-inch dia. water main in S. Glenwood, gas in the east alley, stormwater drain at the southern end of the S. Glenwood cul-de-sac, and 8-inch dia. sewer main and wire utilities (power CATV, phone, internet, etc.) located on the south lot boundary of Lot 7. Lot 4 (northern-most lot) has an existing residence to be removed as a result of this development. The existing site is most accurately described on drawings C1.0, “Existing Site & Demo Plan.”

PROPOSED PROJECT

The South Glenwood Apartments (SGA) project includes a proposal for three attached buildings (modules/complexes), three-stories in height, comprised of a 20-unit (total) rental apartments constructed at addresses 640 and 650 S. Glenwood Street. The Owner will maintain leases on all units to be used for long-term workforce housing. Unit types include 4 (ea.) studios of 400 sq. ft, 2 (ea.) one-bedrooms of 575 sq. ft, 11 (ea.) two-bedrooms of 725-800 sq. ft, and 3 (ea.) three bedrooms of 975-1125 sq. ft. Parking will be provided at grade within garages and the proposed parking lot. Spaces are included for 32 cars; 29 intended for residence and 3 for visitors.

Additional details regarding construction management, vehicle access and parking, pedestrian access, utilities, and site improvements are provided within the subsections of this report.

1.0 UTILITIES

Sections below provide descriptions of existing and proposed utilities as they relate to the utility requirements for this development. Drawing C3.0, "Utility Plan," provides details for each utility improvement.

1.1 WATER SUPPLY

In accordance with drawings C3.0, the SGA project will tie into an existing 8" dia. water line within South Glenwood Avenue. The static water pressure in this location is approximately 63 psi per Town of Jackson Public Works. Modeling indicates that the existing fire hydrant on the west side of the cul-de-sac will yield an estimated 2,845 gpm at 20 psi residual pressure.

Domestic, fire, and irrigation demands were considered for sizing the water service to the SGA project. Calculations are provided in Appendix I of this report and described below.

Fire Flow: The estimated fire flow requirement to the SGA is 365 gpm and the recommended fire service line is a 6-inch diameter. Sprinkler flows were estimated in accordance with NFPA. Flow requirements for the adjacent hydrant were calculated based on Appendix B of the International Fire Code (IFC). A type V-A Structure of this size requires a fire flow of 2,250 gallons per minute for a duration of two hours. Water modeling indicates that under fire sprinkler demand, the adjacent public water system will see a 2 psi drop in pressure. The model also indicates that while under maximum projected fire sprinkler demand, the fire hydrant is capable of producing 2250 gpm at a residual pressure of 26.8 psi.

Domestic Flows: The domestic water demands, totaling 67 gpm, were estimated using fixture unit counts for the proposed SGA project. An additional 30 gpm will be required for irrigation, however, it is assumed that irrigation will not affect peak-hour domestic demands since either demand is unlikely to happen concurrently. The selected

domestic service, branching off the 6-inch fire service line exterior to the building, is 4-inch diameter. Drawing C3.0 describes the alignment and details for water service.

The water service and building fire and domestic water system will be constructed in accordance with the following:

- Domestic services will provide a dual check valve for backflow prevention, and fire sprinkler system and irrigation systems will provide reduced pressure principal back flow preventers in accordance with the IPC and TOJ requirements.
- Fire service line shall be installed in accordance with NFPA 13 and NFPA 24 to provide proper clearances, seismic requirements, flushing and hydro testing (IFC 901.4.1).
- Pitot water flow-test is required on all new fire sprinkler installation per NFPA 13R and NFPA 13 systems. Plans will not be approved by Town of Jackson Fire/EMS w/out certified test.

Note: The criteria above is also in the plans.

1.2 WASTEWATER DISPOSAL

There is an existing 8-inch PVC sewer main at the south lot boundary of Lot 7. In accordance with Sketch Plan comments, the applicant is prepared to provide a dedicated 15-ft wide utility (sewer) easement to the Town that will be submitted and recorded with the Town of Jackson and Teton County prior to Commercial Building Permit approval.

The existing 8-inch PVC sewer main at the south lot boundary of Lot 7 is preferred as the sewer connection point for the development. In accordance with drawing C3.0, "Utility Plan", the proposal includes construction of a 6-inch diameter PVC sewer main running in a north to south direction within the parking lot, 4-inch diameter PVC sewer services to each building (complexes "A", "B" and "C") and two manholes. The 6-inch diameter collector line will connect to the existing 8-inch main via manhole as shown in plan. The connecting manhole base will be poured in-place in order to limit disruption to the existing sewer main. Slopes for 4-inch and 6-inch sewer lines will be laid at 2% (minimum) and 1.2%, respectively. Cleanouts will be provided approximately five feet from the building foundation at each installed service and when required after 100 feet or 135° of accumulated bends.

Per the Wyoming DEQ, the maximum day wastewater generation for apartments is 120 gpd/bedroom for apartments, resulting in 4,440 gallons per day (gpd). Existing sewer flows from the existing one and two-bedroom residences (to be demolished) on Lot 4 total 430 gpm. Final wastewater contribution to the Town's sewer main, accounting for removal of residences on Lot 4, totals 4010 gpd. Applying a peaking factor of ten yields a peak hour wastewater generation of approximately 28 gpm. Based on existing pipe type, diameter and slope, the existing TOJ sewer infrastructure (8" dia. sewer main) will

have approximately 546 gpm of remaining capacity. Detailed calculations for wastewater estimates and capacity calculations have been provided in the Appendix II.

2.0 VEHICAL ACCESS & PARKING

Presented below are analysis and findings demonstrating the development is compliant with TOJ LDR's and the Teton County Fire Dept. A "Sign and Striping Plan" has been provided as drawing C5.0 to indicate drive lanes, traffic flow (ingress and egress) and signage.

2.1 VEHICAL ACCESS DESIGN

Drawing C5.0, and Exhibit B in Appendix III, describing traffic circulation/vehicle movement has been prepared to describe vehicle ingress to the proposed apartment complex via. the S. Glenwood cul-de-sac, and egress via. the alley north to Snow King Avenue. Access dimensions and turning radiuses are shown on drawing C4.0.

Turning movements, both ingress and egress, for the parking lot and parking spaces have been provided for review as Exhibit A in Appendix III. Turning movements were completed with a 19-ft long ASSHTO passenger car. The analysis indicates all parking lot and space access movements can be completed.

2.2 EMERGENCY ACCESS

In accordance with 2015 IFC 503.1.1, fire apparatus access is provided via. S. Glenwood with an existing 80-ft diameter turnaround at the City cul-de-sac. IFC 503.1.1 states the following:

"The fire apparatus access road shall extend to within 150 feet of all portions of the facility and all portions of the exterior walls of the first story of the building as measured by an approved route around the exterior of the building facility."

The distance measured from the apparatus access (S. Glenwood Ave.) to the furthest point on the building is 200 feet. IFC 503.1.1 authorizes the Fire Official to make exception to the 150 feet criteria for buildings with automatic fire sprinkler systems. The proposed apartment building will be sprinkled and the applicant is asking for an exception to IFC 503.1.1. from the Fire Official.

2.3 PARKING

In accordance with drawing C5.0, 20-ft parking spaces and a 22-ft drive aisle east of the apartment complex will be provided. Architectural drawings provided describe the quantity and locations of onsite parking.

2.4 TRAFFIC IMPACT ANALYSIS

2.4.1 PROPOSED PROJECT

The proposed project is a development of two properties on Glenwood Street, south of Snow King Avenue in the Town of Jackson. One property includes a detached single-family house, while the second property is currently vacant. The project will be a residential development with 20 apartments. The project will be located on the east side of the existing Cul-De-Sac at the southern terminus of Glenwood Street. The properties are both currently zoned as Neighborhood Medium Density-1 (NM-2).

2.4.2 IMPACT ASSESSMENT METHODOLOGY

In order to perform any traffic impact assessment, the general methodology is to compare the traffic levels in an existing state with those of a projected situation. The Institute of Traffic Engineers has provided data and methodology that can be used to determine the number of trips generated from a property dependent on the usage. The differential in trips generated between the pre- and post-development conditions can be considered to be the impact caused by the development. Traffic counts provided by the Wyoming Department of Transportation (WYDOT) and previous studies performed along the Snow King Avenue corridor will provide context for the volume of trips generated by the development. This preliminary traffic impact analysis will allow a general understanding of the traffic impacts due to the proposed development.

2.4.3 EXISTING TRIP GENERATION

The proposed project site currently contains one single family home and vacant land. For this trip generation analysis, the peak hour for Snow King Avenue will be analyzed for both the A.M. and P.M. hours. Trips added to the peak hours of the adjacent street would have the greatest impact on the level of service of nearby intersections. As shown in the summary table below, the existing use of the property generates 1 or 2 trips per day during the A.M. and P.M. peak hour, respectively.

A.M. PEAK HOUR TRIP GENERATION (ADJACENT STREET)

LAND USE	ITE LAND USE DESIGNATION CODE	GROSS SQ. FT. (1,000 SF)	UNITS	A.M. PEAK HOUR TRIP GENERATION RATE	TRIP GENERATION
SF DETACHED HOUSING	210		1	0.75	<u>0.75</u>
TOTAL					<u>1</u>

P.M. PEAK HOUR TRIP GENERATION (ADJACENT STREET)

LAND USE	ITE LAND USE DESIGNATION CODE	GROSS SQ. FT. (1,000 SF)	UNITS	P.M. PEAK HOUR TRIP GENERATION RATE	TRIP GENERATION
SF DETACHED HOUSING	210		1	1.01	<u>1.01</u>
TOTAL					<u>2</u>

SOURCE: TRIP GENERATION RATES TAKEN FROM
INSTITUTE OF TRANSPORTATION ENGINEERS (ITE) *TRIP GENERATION, 7TH
EDITION*

2.4.4 EXISTING TRAFFIC AND CIRCULATION

The proposed development on Glenwood Street is one block from roads of fairly high traffic density (Snow King Avenue Corridor). Snow King Avenue currently sees a relatively large volume of traffic, particularly during peak summer tourism season. The intersection of Glenwood and Snow King is controlled by a two-way stop sign, with Snow King Avenue being the major route and Glenwood being the stop-controlled route.

Traffic count data from 2006 can be found on the WYDOT website for many of the collectors and arterial streets in the Town of Jackson. This data can be used to contextualize the amount of traffic that this neighborhood currently experiences. As shown in the appendix, the average daily traffic (ADT) on Snow King Avenue between Millward and Cache Street is 4216 trips per day. Studies submitted to the Town of Jackson provided by Rendezvous Engineering and Felsburg Holt & Ullevig indicate Average Daily Traffic volumes of 5893 (August 2008) and 6100 (August

2011) respectively. Applying a typical design hour factor (K-Factor) to the given ADT yields a peak hour design volume of roughly 567 trips per hour (DHV). The majority of this traffic doesn't use Glenwood Street, but the data shows that the area surrounding the proposed development currently sees a relatively high volume of traffic.

The trips generated by the existing development are 1 to 2 trips during the peak hour of the adjacent street as indicated by the tables provided above.

2.4.5 PROPOSED TRIP GENERATION

The Development Plan for the subject property indicates a 20-unit apartment building with attached garages and outdoor parking. No other provisions for land use are proposed as part of the development, so the trip generation will simply be based on the number of apartment units. Similarly, to the existing trip generation for the property, the A.M. and P.M. peak hours of adjacent streets will be used to evaluate the impacts of the proposed development. The tables provided below show the anticipated trips generated by the proposed development during the A.M. and P.M. peak hours for the adjacent street.

PROPOSED A.M. PEAK HOUR TRIP GENERATION (ADJACENT STREET)

LAND USE	ITE LAND USE DESIGNATION CODE	GROSS SQ. FT. (1,000 SF)	UNITS	A.M. PEAK HOUR TRIP GENERATION RATE	TRIP GENERATION
APARTMENTS	220		20	0.51	<u>10.20</u>
TOTAL					11

PROPOSED P.M. PEAK HOUR TRIP GENERATION (ADJACENT STREET)

LAND USE	ITE LAND USE DESIGNATION CODE	GROSS SQ. FT. (1,000 SF)	UNITS	P.M. PEAK HOUR TRIP GENERATION RATE	TRIP GENERATION
APARTMENTS	220		20	0.62	<u>12.40</u>
TOTAL					13

SOURCE: TRIP GENERATION RATES TAKEN FROM INSTITUTE OF TRANSPORTATION ENGINEERS (ITE) *TRIP GENERATION*, 9TH EDITION

2.4.6 PROPOSED TRAFFIC CIRCULATION

A comparison of the existing and proposed conditions indicates an anticipated increase of 10 vehicle trips during the A.M. peak hour and an increase of 11 vehicle trips during the P.M. peak hour. Furthermore, ITE provides directional distribution data for trip generation. This data suggests that the trips will be 20% entering/80% exiting in the morning, and 63% entering/37% exiting during the evening peak.

The vehicular circulation at the development is designed to be one-way entry and exit. The vehicles arriving to the apartments will enter through a new curb cut on the east side of the existing Glenwood cul-de-sac. Vehicles exiting the site will leave through a one-way exit to the alley. All vehicles exiting the development will access Snow King Avenue via the alley between Glenwood and Cache Streets.

Applying the directional distribution to the proposed A.M. trip generation suggests that 8 to 9 vehicles will access Snow King Avenue through the existing alley during the A.M. peak. Since the intersection of the alley and Snow King is essentially a 3-way intersection with the alley being the minor road, there will be little to no impact to the existing traffic on Snow King Avenue.

The impacts to Snow King Avenue would be even less during the evening peak hour. The directional distribution suggests that 8 vehicle trips would be entering the development during the peak hour. The one-way entrance to the site mandates that these 8 trips would be sourced from the intersection of Glenwood and Snow King. Given that the ratio of additional trips to the design hourly volume is very small and turning movements from Snow King Avenue to Glenwood Street are nearly unrestricted in a two-way-stop controlled intersection it can also be assumed that this impact would be minimal.

Currently, there is one curb cut on Glenwood Street used for the existing residential entry and exit. There is also an existing curb cut on the east side of the Glenwood cul-de-sac which is used to access the vacant land of 650 S Glenwood Street. The development proposes to eliminate these curb cuts and replacing them with a single curb cut near the southeast side of the existing cul-de-sac. See Exhibit B in the appendix for illustration of the proposed traffic flow.

2.4.7 ALTERNATIVE MODES ANALYSIS

Since the proposed development is only a few blocks from START bus stops at the fair grounds and the Snow King Events center, it is anticipated that a portion of the trips generated by the development would be absorbed by public transit. The development is also within walking distance from the town square and bicycle access within the town of Jackson improves every year. With the requirement for constructing pedestrian access to connect to the existing pedestrian corridor, the argument for alternative modes gains strength.

No trip reduction was assumed due to the project's proximity to public transportation; the discussion is included to further illustrate the minimal impact of the development on neighborhood traffic, particularly during peak summer tourism season.

3.0 PEDESTRIAN ACCESS

Site design for pedestrian access has been provided to comply with TOJ comments stemming from the Sketch Plan submittal. Public sidewalks and disability parking spaces will be designed to meet ADA standards. In accordance with TOJ, sidewalks that cross-over proposed access drives will be designed and constructed to provide a consistent vertical alignment with sidewalk legs on either side driveway. Drawings C1.1 demonstrates plans for pedestrian corridors along S. Glenwood to Snow King Ave. and to and from the building and proposed parking.

Per TOJ, the proposed sidewalk running on the east side of S. Glenwood and north to Snow King Avenue has been provided to meet the guidelines for pedestrian frontages in the Community Streets Plan; this includes a 5-ft attached landscape strip and 6-ft detached sidewalk. The landscape strip will have tree plantings properly spaced in accordance with the landscaping plans.

4.0 GRADING & EROSION CONTROL

Drawing C4.0, "Grading and Erosion Control Plan" has been provided for review. The plan provides spot elevations and existing and proposed contours to describe existing and proposed site grading, drainage and storm detention. Erosion control devices, including detention areas and straw wattles, have been added to prevent off-site migration of storm water and sediment.

5.0 STORMWATER & SNOW MANAGEMENT

5.1 REQUIREMENTS FOR CONSTRUCTION

A requirement has been added to drawing C2.0, "Construction Phasing and Staging Plan", requiring the Contractor to maintain erosion control devices throughout construction and provide adequate onsite detention for stormwater.

5.2 STORMWATER DESIGN

The Town of Jackson LDRs require that the release rate of storm water from the post-development site does not exceed the pre-development runoff for the 1-year through 100-yr event. For this project, the 100-yr storm event, along with the rational and modified ration methods were used to determine the rate of runoff and volume of storm water detention. Supporting calculations can be found in Appendix IV of this report.

5.3 PRE- AND POST-DEVELOPMENT SITE RUNOFF

The pre- and post-development site runoff for the 100-year storm event was calculated as 0.32 cfs and 0.59 cfs, respectively. The resulting storage (pre-development – post-development) is 93 cu. ft. The proposed design calls for complete detainment of runoff from the parking lot and the alley entrance, where the post-development runoff volume from the proposed parking area (that will be detained on-site) is 58 cu. ft. The resulting storage volume per the LDR's is 35 cu. ft (98-58). Nelson's recommendation is to provide a factor of safety of 1.5, which would require a minimum of 53 cu. ft of onsite detention; proposed parking detention not included. Storm detention areas and volumes, which are far in excess of what is recommended, are provided on drawing C4.0.

5.4 PARKING LOT STORM WATER SYSTEM DESIGN

Stormwater management for the parking lot will include 30" dia. catch basins, 6" dia. storm pipe, 1500-gallon sand-oil separator and 384 square foot detention/infiltration bed. Storm collection and detention facilities were designed to accommodate the 100-yr event. The peak flow for the parking lot was estimated as 0.31 cfs (140 gpm). Per the proposed design, 6" dia. storm pipe laid at 1.5% results in a pipe that is 35% full at 140 gpm capacity. The sand-oil separator capacity was estimated at ten times (10 X) the peak flow (140 gpm), or roughly 1500 gallons. The detention and infiltration bed was sized to store and infiltrate 100-yr storms assuming a 10 minute per inch (mpi) infiltration rate; the size of the bed may change depending on results of a percolation test that will be performed prior to final design.

In accordance with DEQ, the design team and applicant are planning to obtain a UIC permit (for subsurface discharge) for the parking lot storm water management system.

5.5 SNOW MANAGEMENT

Proposed snow storage areas are described in detail on drawing C1.1. In accordance with the Town LDR's, the following is required:

A minimum site area representing 2.5% of the total required off-street parking and loading area, inclusive of aisles and access drives, shall be provided as the snow storage area.

In accordance with the proposed plan, the driveway and parking area is roughly 8,225 s.f. and 2100 s.f. (25% of parking area) of snow storage is provided.

6.0 CONSTRUCTION PHASING & STAGING

A construction phasing and staging plan has been prepared and included with the submittal as drawing C2.0. Pending there are not any unforeseen delays, the contractor is planning to commence with construction of the entire building (complex) starting in the Fall of 2019.

APPENDIX I – WATER SUPPLY CALCULATIONS

South Glenwood Apartments
Fixture Unit Tally

17-296-02
3/12/2019
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Summary of Fixtures

Apartment #	Bath	Kitchen Sink 1/2	Shower	Wash Sink	Water Closet (tank)	Dishwasher 1/2	Washing Machine
C101 (3-bed)		1	2	2	2	1	1
B101 (1-bed)		1	1	1	1	1	1
A101 (1-bed)		1	1	1	1	1	1
C201 (2-bed)		1	1	1	1	1	1
C202 (2-bed)	1	1	1	2	2	1	1
C203 (3-bed)	1	1	1	2	2	1	1
B201 (2-bed)		1	1	1	1	1	1
B202 (2-bed)	1	1	1	2	2	1	1
B203 (1-bed)		1	1	1	1	1	1
A201 (3-bed)		1	2	2	2	1	1
A202 (2-bed)	1	1	1	2	2	1	1
C301 (2-bed)		1	1	1	1	1	1
C302 (2-bed)	1	1	1	2	2	1	1
C303 (1-bed)		1	1	1	1	1	1
B301 (2-bed)		1	1	1	1	1	1
B302 (2-bed)	1	1	1	2	2	1	1
B303 (1-bed)		1	1	1	1	1	1
A301 (2-bed)		1	1	1	1	1	1
A302 (2-bed)	1	1	1	2	2	1	1
A303 (2-bed)		1	1	1	1	1	1
TOTALS:	7	20	22	29	29	20	20

Domestic Water Flows

Description of Improvements:

Total fixtures for 4 (ea.) studios of 400 sq. ft, 2 (ea.) one-bedrooms of 575 sq. ft, 11 (ea.) two-bedrooms of 725-800 sq. ft, and 3 (ea.) three bedrooms of 975-1125 sq. ft.

Estimating Domestic Max. Demand

*Calculations are based on methods outlined in the AWWA, "Sizing Water Service Lines and Meters" manual.

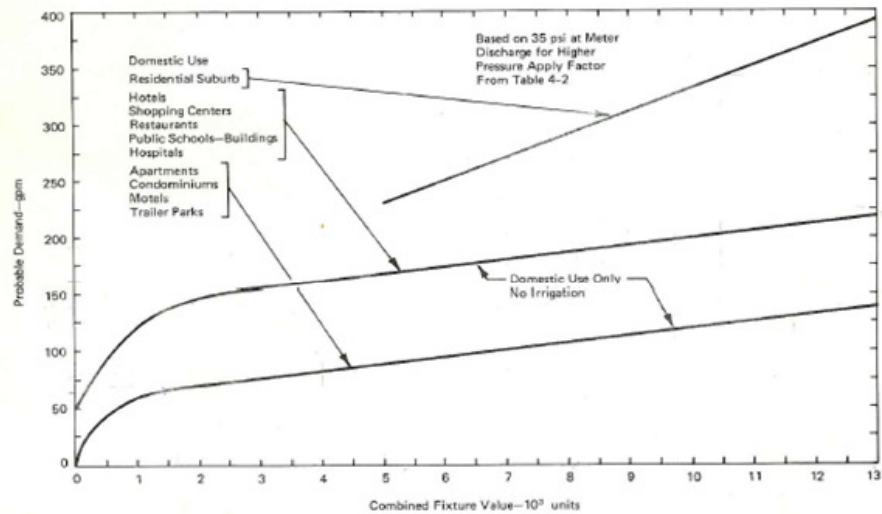
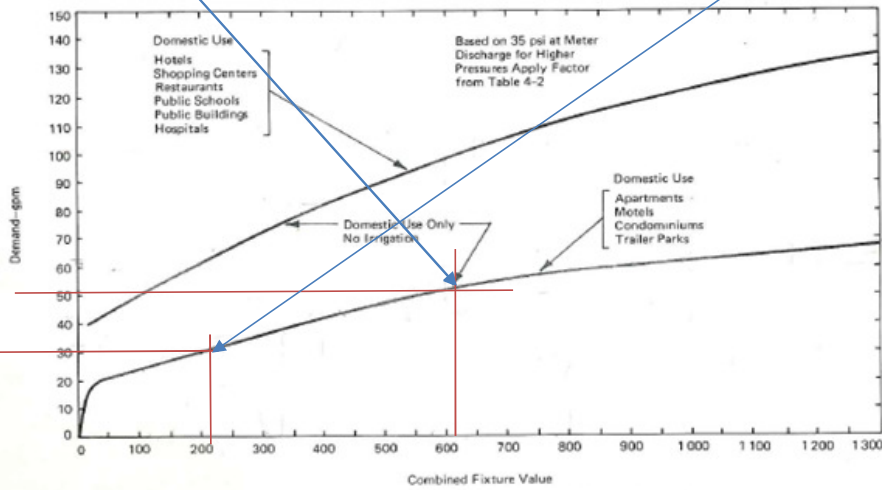
Domestic Water Demand for Facility Given Specified Fixtures Assume Average Residential Fixture Value (AWWA M2)

Fixture Type	Fixture Value Based on 35 psi at Meter Outlet	Number of Fixtures	Fixture Value
Bathtub	8	7	56
Combined Sink & Tray	3		0
Drinking Fountain (cooler)	1		0
Drinking Fountain (public)	2		0
Kitchen Sink (1/2" connection)	3	20	60
Kitchen Sink (3/4" connection)	7		0
Lavatory (3/8" connection)	2		0
Lavatory (1/2" connection)	4		0
Laundry Tray (1/2" connection)	3		0
Laundry Tray (3/4" connection)	7		0
Shower Head (shower only)	4	22	88
Service Sink (1/2" connection)	3		0
Service Sink (3/4" connection)	7		0
Urinal (pedestal flush valve)	35		0
Urinal (wall or stall)	12		0
Urinal (trough, 2-ft unit)	2		0
Wash Sink (each set of faucets)	4	29	116
Water Closet (flush valve)	35		0
Water Closet (tank type)	3	29	87
Dishwasher (1/2" connection)	5	20	100
Dishwasher (3/4" connection)	10		0
Washing Machine (1/2" connection)	5	20	100
Washing Machine (3/4" connection)	12		0
Washing Machine (1" connection)	25		0
Hose Connections 1/2" (wash down)	6		0
Hose Connections 3/4" (wash down)	10		0
Hose 1/2" (50ft length - wash down)	6		0
Hose 5/8" (50ft length - wash down)	9		0
Hose 3/4" (50ft length - wash down)	12		0
Irrigation	3		0
Total Fixture Units			607

Base on Fixture Count of 607, using the upper line in Fig. 4.4 for a apartments, the estimated Maximum Water Demand is 52 gpm. Assume irrigation will take place outside hours of normal domestic use (night) and will be less than 30 gpm. Based on fixture unit count per building (210) estimated flow is 30 gpm.

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-sizing water service lines and meters



Calculate Demands Based on Estimated System Pressure

	<u>Appartment Complex</u>	<u>Per Complex/ Building</u>	
Est. Max. Demand	52	30	gpm
Pressures in South Glenwood	63	63	psi, from water CAD
Elevation at South Glenwood	6225	6225	ft
F.F. of Middle Floor	6240	6240	ft, Sfc Elev. + 1.5 floors (15ft)
Pressure at Top Floor	56.5	56.5	psi

Table 4.2 (for pressures other than 35 psi)

<u>Design Pressure</u>	<u>Factor</u>
20	0.74
30	0.92
35	1
40	1.07
50	1.22
60	1.34
70	1.46
80	1.57
90	1.68
100	1.78

For Pressures Deviating from 35 psi

	<u>Appartment Complex</u>	<u>Per Complex/ Building</u>	
Est. Pressure (psi)	56.5	56.5	psi
Max. Demand @ Est Pressure	67.69	39.05	gpm

South Glenwood Apartments
Water Service Sizing

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Pressure in Building @ Max. Demand

Pressure at Water Main 63 psi
Maximum Flow 67.69 gpm (per apartment complex)
Elevation Change from main to 3rd Story Building 32 ft

PIPE SEGMENT	LENGTH (FT)	FLOW RATE (GPM)	FLOW RATE (CFS)	Pipe O.D. (in)	Pipe Type	Pressure Rating (psi)	Inside Dia. (in)	Inside Dia. (ft)	Velocity (fps)
L1	80	67.7	0.151	6	DIP	-	6.00	0.500	0.768
L2	20	67.7	0.151	4	DIP	-	4.00	0.333	1.728

PIPE SEGMENT	Velocity Head (ft)	Ks-Factor	Ks/d	Kinematic Viscosity	Reynolds, Re	Minor Losses, hm (ft)	Friction Losses, hf (ft)	Total Losses (ft)	Friction Loss per L.F. (ft)
L1	0.009	0.000279	0.000558	1.92E-05	19962.0	0.00	0.04	0.04	0.0005
L2	0.046	0.000033	0.000098	1.92E-05	29943.0	11.34	0.07	11.41	0.0033
Total:								11.45	

Solver

	Set to Zero (Colebrook Eqn)	By Solving For (Friction Factor)
L1	0.00E+00	0.027
L2	-1.46E-08	0.024

Available Pressure at 3rd Story Building 44.2 psi

**PIPE SEGMENT L1
MINOR LOSSES (hm)**

Pipe Fittings	Number of Fittings	K-Value	Total	Total	Minor Loss (ft)
6" dia. 90 deg. Elbow	1	0.45	0.45	0.20	0.00
6" dia. Inlet		0.78	0	0.00	0.00
6" dia. Outlet		1	0	0.00	0.00
6" Gate Valve	1	0.12	0.12	0.01	0.00
6" Plug Valve		0.27	0	0.00	0.00
RPZ		12	0	0.00	0.00
6" dia. Tee (thru flow)	1	0.3	0.3	0.09	0.00
6" dia. Tee (thru branch)		0.9	0	0.00	0.00
Total:			0.3	0.3	0.00

**PIPE SEGMENT L2
MINOR LOSSES (hm)**

Pipe Fittings	Number of Fittings	K-Value	Total	Total	Minor Loss (ft)
4" dia. 90 deg. Elbow	3	0.34	1.02	0.35	0.02
4" dia. 45 deg. Bend	0	0.27	0	0.00	0.00
RPZ	1	12	12	144.00	6.68
2" Meter	1	10	10	100.00	4.64
4" dia. Tee (thru flo)	1	0.34	0.34	0.12	0.01
4" dia. Tee (thru branch)	0	1.02	0	0.00	0.00
4" dia. Gate Valve	2	0.14	0.28	0.04	0.00
Total:			244.5	244.5	11.34

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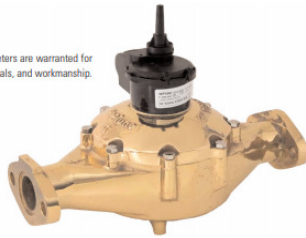


T-10 METER

SIZES: 1 1/2" and 2"



T-10 water meters are warranted for performance, materials, and workmanship.



Every T-10 water meter meets or exceeds the latest AWWA C700 Standard. Its nutating disc, positive displacement principle is time-proven for accuracy and dependability since 1892, ensuring maximum utility revenue.

CONSTRUCTION

The T-10 water meter consists of three major assemblies: a register, a no-lead high copper alloy maincase, and a nutating disc measuring chamber.

The T-10 meter is available with a variety of register types. For reading convenience, the register can be mounted in one of four positions on the meter.

The corrosion-resistant no-lead high copper alloy maincase will withstand most service conditions: internal water pressure, rough handling, and in-line piping stress.

The innovative floating chamber design of the nutating disc measuring element protects the chamber from frost damage while the unique chamber seal extends the low flow accuracy by sealing the chamber outlet port to the maincase outlet port. The nutating disc measuring element utilizes corrosion-resistant materials throughout and a thrust roller to minimize wear.

WARRANTY

Neptune provides a limited warranty with respect to its T-10 water meters for performance, materials and workmanship.

When desired, maintenance is easily accomplished either by replacement of major assemblies or individual components.

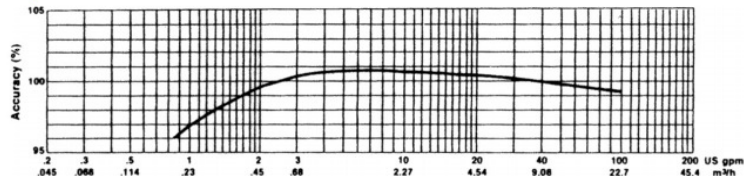
KEY FEATURES

- Register
 - Magnetic drive, low torque registration ensures accuracy
 - Impact-resistant register
 - High resolution, low flow leak detection
 - Bayonet style register mount allows in-line serviceability
 - Tamperproof seal pin deters theft
 - Date of manufacture, size, and model stamped on dial face
- No-Lead Maincase
 - Made from no-lead high copper alloy
 - ANSI/NSF 61 Certified
 - Lifetime guarantee
 - Resists internal pressure stresses and external damage
 - Handles in-line piping variations and stresses
 - No-lead high copper alloy provides residual value vs. plastic
 - Electrical grounding continuity
- Nutating Disc Measuring Chamber
 - Positive displacement
 - Widest effective flow range for maximum revenue
 - Proprietary polymer materials maximize long term accuracy
 - Floating chamber design is unaffected by meter position or in-line piping stresses

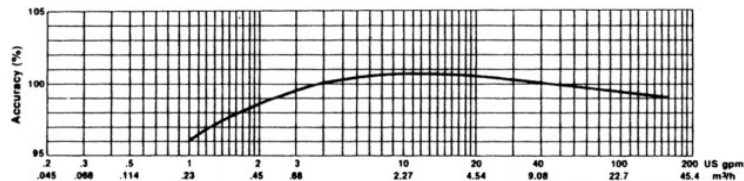
COMPATIBILITY

Adaptability to all present and future systems for flexibility is available only with Neptune's ARB® Utility Management Systems™.

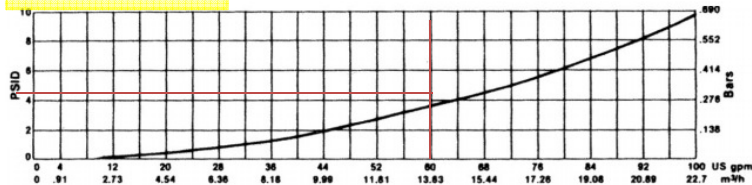
1 1/2" ACCURACY



2" ACCURACY



1 1/2" PRESSURE LOSS



South Glenwood Apartments
Fire Service Sizing

17-296-02
3/12/2019
jk

Pipe & Flow Characteristics

Dynamic Pressure at Water	29	psi - (2250 gpm at adjacent fire hydrant in Glenwood)
Main		
Static Pressure	63	psi
Flow	362.3	gpm

PIPE SEGMENT	LENGTH (FT)	FLOW RATE (GPM)	FLOW RATE (CFS)	Pipe O.D. (in)
L1	80	362.3	0.807	6

PIPE SEGMENT	Velocity Head (ft)	Ks-Value	Ks/d	Kinematic Viscosity
L1	0.262	0.000279	0.000558	1.92E-05

Solver

	Set to Zero (Colebrook Eqn)	By Solving For (Friction Factor)
L1	-6.77E-07	0.020

PIPE SEGMENT L1
MINOR LOSSES (hm)

Pipe Fittings	Number of Fittings	K-Value	Total	Total
6" dia. 90 deg. Elbow	4	0.45	1.8	0.81
6" dia. Inlet		0.78	0	0.00
6" dia. Outlet		1	0	0.00
6" Gate Valve	2	0.12	0.24	0.03
6" Plug Valve		0.27	0	0.00
RPZ	1	7	7	49.00
6" dia. Tee (thru flow)		0.3	0	0.00

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Fire Spinkler Flows

Hazard Classification **Light Hazard Occupancies** per NFPA 13, Section 1-4.7.1 (page 58)
Building Area:

Minimum Flow for Hose Connection 250 gpm per NFPA 13, Table 11.2.3.1.2

Utilize Early Suppression Fast-Response Sprinklers (ESFR) per Section 4-4.6

Minimum Design Area 960 SF per NFPA 13
Actual Design Area 1123 SF - Light hazard

Required Flow

Required Density 0.1 gpm/sf per NFPA 13, Figure 11.2.3.1.1
Sprinkler Demand 131.0541 gpm (15-20% Overage)
Required Flow (sprinkler and hose) **362.3 gpm - 11.1.4.2**
Static Pressure at Fire Sprinklers 43.52 psi @ design height
Dynamic Pressure at Fire Flow 44.31 psi @ design height - includes 365 gpm fire sprinkler and 500 gpm fire hydrant demand

SOUTH GLENWOOD APARTMENTS
FIRE FLOWS - HYDRAULIC MODEL RESULTS

3/12/2019

JK

18-296-02

Summary of Hydraulic Model Results			
South Glenwood Apartments			
WaterCAD V8i - Town of Jackson 2013 model			
Glenwood Street Fire Flow			
Location	Total Demand	Residual Pressure	Junction Label
	<u>gpm</u>	<u>psi</u>	
Intersection of Snow King and Glenwood	12	44.8	J-112
Point of connection	365	29.0	POINT OF CONNECTION
Fire Hydrant North of Cul-De-Sac	2,250	26.8	J-347
South Glenwood Cul-De-Sac	3	26.7	J-172
*See Utility Plan for Hydrant and Connection Locations			

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APPENDIX II – WASTEWATER CALCULATIONS

SOUTH GLENWOOD APARTMENTS
SEWER DESIGN FLOWS

3/12/2019
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18-296-02

BASED ON WYOMING DEQ DESIGN FLOW RATES IN CH. 11 TABLE

STRUCTURE	DESC.	QNTY	WW RATE	SOURCE	UNIT	WW FLOW
Existing (Demo)						
West Residence	Bedrooms	2	140	DEQ Chapt. 11	gpd/bed	280 gpd
East Residence	Bedrooms	1	150	DEQ Chapt. 11	gpd/bed	150 gpd
Proposed						
Studio Apartment (1-bed \ 4 units each)	Bedrooms	4	120	DEQ Chapt. 11	gpd/bed	480 gpd
Apartment (1-bed \ 2 units each)	Bedrooms	2	120	DEQ Chapt. 11	gpd/bed	240 gpd
Apartment (2-bed \ 11 units each)	Bedrooms	22	120	DEQ Chapt. 11	gpd/bed	2640 gpd
Apartment (3-bed \ 3 units each)	Bedrooms	9	120	DEQ Chapt. 11	gpd/bed	1080 gpd

TOTAL EXISTING WASTEWATER DEMAND	430 gpd
AVG FLOW	0.30 gpm

TOTAL WASTEWATER DEMAND (PROPOSED - EXISTING)	4010 gpd
AVG FLOW	2.78 gpm

PEAK FLOW	28 gpm
------------------	---------------

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SOUTH GLENWOOD APARTMENTS
SEWER SERVICE SIZING

3/12/2019
JK
18-296-02

Max. WW Flows in Proposed 6-inch Sewer Collector

Upstream Manhole Inv. Elev. 6220.65 ft
Downstream Manhole Inv. Elev. 6218.75 ft
Distance Between Manholes 150 ft

Mannings Open Channel Pipe Calculations

Pipe Dia, ID	6	in
Flow, Q	28	gpm
Mannings Roughness (PVC), n	0.009	-
Pipe Slope, S	1.267%	%

Flow, Q	0.062	cfs
Pipe Dia, ID,	0.500	ft
Pipe Area, A	0.023	ft^2
Pipe Per, P	0.433	ft
Normal Depth, YN	0.088	ft
Theta	99.3	deg
Top Width, T	0.38	ft

Manning's Eqn	8.0324E-07	-
Theta	1.734	rad

Normal Depth, YN	1.06	in
Velocity	2.66	ft/s
% Full	11.9	%

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SOUTH GLENWOOD APARTMENTS
EXISTING MAIN - REMAINING CAPACITY ANALYSIS

3/12/2019
JK
18-296-02

Analysis for Wastewater Contribution to Existing Main

Upstream Manhole Inv. Elev. 6218.75 ft
Downstream Manhole Inv. Elev. 6218.51 ft
Distance Between Manholes 52 ft

Mannings Open Channel Pipe Calculations

Pipe Dia, ID	8	in
Flow, Q	28	gpm
Mannings Roughness (PVC), n	0.009	-
Pipe Slope, S	0.462%	%
Flow, Q	0.062	cfs
Pipe Dia, ID,	0.667	ft
Pipe Area, A	0.035	ft^2
Pipe Per, P	0.540	ft
Normal Depth, YN	0.104	ft
Theta	92.8	deg
Top Width, T	0.48	ft

Manning's Eqn	0.E+00	-
Theta	1.620	rad

Normal Depth, YN	1.24	in
Velocity	1.80	ft/s
% Full	9.9	%

Remaining Capacity of TOJ Sewer Main

Mannings Open Channel Pipe Calculations

Pipe Dia, ID	8	in
Flow, Q	574	gpm
Mannings Roughness (PVC), n	0.009	-
Pipe Slope, S	0.462%	%

Flow, Q	1.279	cfs
Pipe Dia, ID,	0.667	ft
Pipe Area, A	0.340	ft^2
Pipe Per, P	1.763	ft
Normal Depth, YN	0.626	ft
Theta	303.1	deg
Top Width, T	0.32	ft

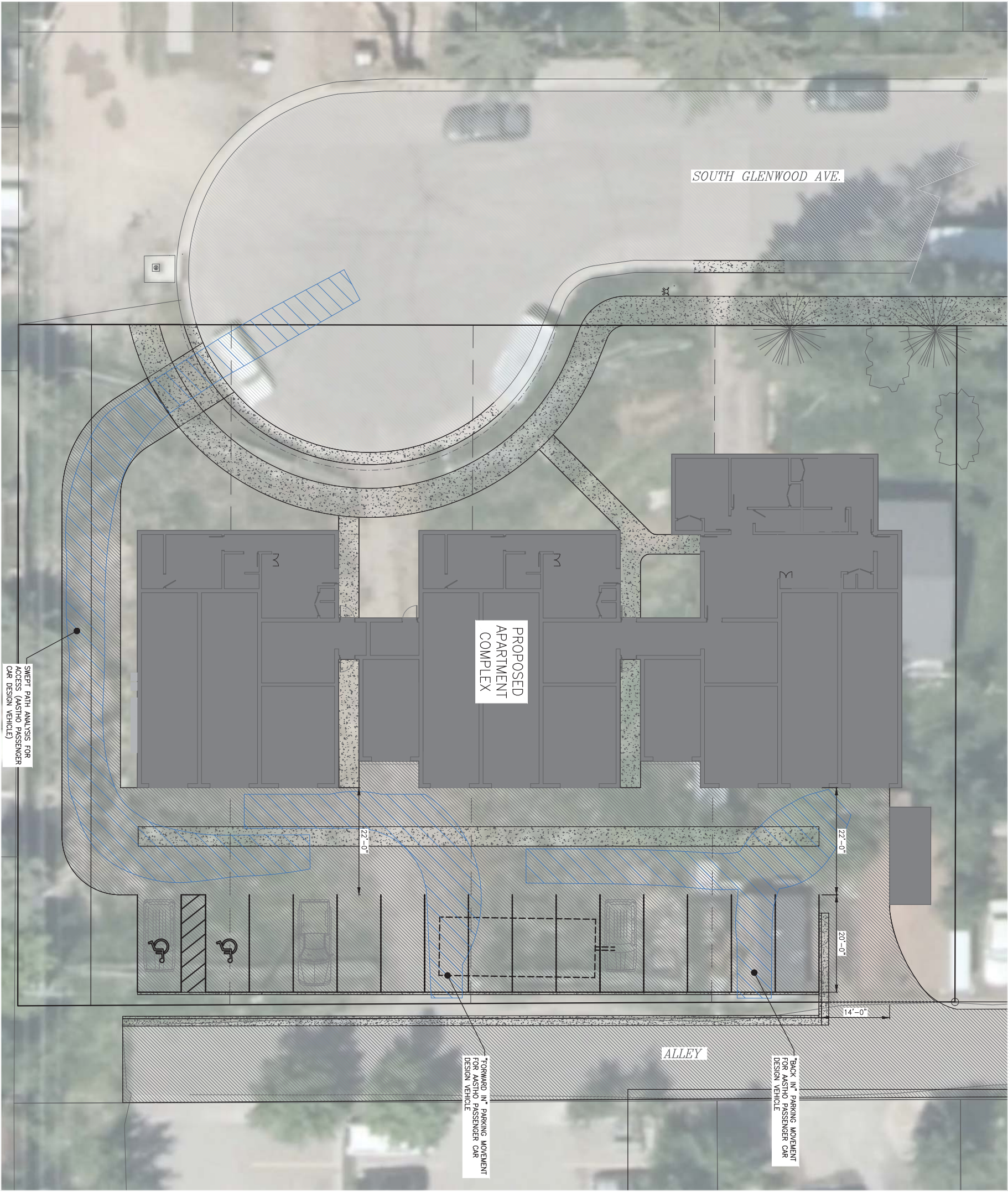
Manning's Eqn	1E-06	-
Theta	5.290	rad

Normal Depth, YN	7.52	in
Velocity	3.76	ft/s
% Full	97.5	%

PEAK FLOW PROPOSED DEV. 27.8 GPM
REMAINING CAPACITY 546.2 GPM

Nelson Engineering
Jackson, Wyoming

APPENDIX III – VEHICAL TURNING ANALYSIS



SWEEP PATH ANALYSIS FOR
ACCESS (ASTHO PASSENGER
CAR DESIGN VEHICLE)

PROPOSED
APARTMENT
COMPLEX

SOUTH GLENWOOD AVE.

ALLEY

"BACK IN" PARKING MOVEMENT
FOR ASTHO PASSENGER CAR
DESIGN VEHICLE

"FORWARD IN" PARKING MOVEMENT
FOR ASTHO PASSENGER CAR
DESIGN VEHICLE

MERGE ARCHITECTS INC

SOUTH GLENWOOD APARTMENTS

640-650 SOUTH GLENWOOD ST
JACKSON, WY 83001

01/17/19 DEVELOPMENT PLAN

THE CONTRACTOR IS RESPONSIBLE FOR MATERIALS, DETAILS AND DIMENSIONS FOR SELECTING FABRICATION PROCESSES, FOR TECHNIQUES OF ASSEMBLY, FOR PERFORMING WORK IN A SAFE MANNER, AND FOR COORDINATING WORK WITH THAT OF ALL TRADES	
JOB NO.:	A/E: 17261 / 17-296-02
SCALE:	AS INDICATED
DATE:	3/1/19
DRAWING TITLE	
VEHICLE TURNING ANALYSIS	
SHEET NO.	

REGISTRATION

CLIENT
BAC GROUP LLC DBA BAC GROUP
3000 N. 10TH ST. SUITE 100
BOZEMAN, MT 59717

ARCHITECT
MERGE ARCHITECTS, INC.
800 SOUTH 14TH STREET, SUITE 100
JACKSON, WY 83001

LANDSCAPE ARCHITECT
MERGE ARCHITECTS, INC.
800 SOUTH 14TH STREET, SUITE 100
JACKSON, WY 83001

CIVIL/STRUCTURAL ENGINEER
MERGE ARCHITECTS, INC.
800 SOUTH 14TH STREET, SUITE 100
JACKSON, WY 83001

APPENDIX IV – STORMWATER RUNOFF

SOUTH GLENWOOD APARTMENTS STORMWATER RUNOFF CALC'S - ENTIRE SITE

17-296-02
3/13/2019
JK

PRE-DEVELOPMENT

ROOF CALCULATIONS

ROOF AREA (FT^2)=	1894	Total Site Area (s.f.)	26866
C-VALUE =	0.9		
S =	58%		
L (ft) =	50		
tc (min) =	0.66	tc = 1.8(1.1 - C)L^0.5/S^0.3333, (Corps of Eng. Eqn.)	

DRIVEWAY CALCULATIONS

DRIVEWAY AREA (FT^2)=	4606		
C-VALUE =	0.9		
S =	3%		
L (ft) =	105		
tc (min) =	2.60	tc = 1.8(1.1 - C)L^0.5/S^0.3333, (Corps of Eng. Eqn.)	

LANDSCAPING CALCULATIONS

LANDSCAPING AREA (FT^2)	20366		
C-VALUE =	0.3		
S =	2%		
L (ft) =	210		
tc (min) =	15.63	tc = 1.8(1.1 - C)L^0.5/S^0.3333, (Corps of Eng. Eqn.)	

Total Time of Conc., Tc = 15.63 min (landscaping)
Composite Cc = 0.45
Total Area, At = 26866 ft^2

TABLE 4920.B JACKSON IDF* CURVE DATA - 100-YR STORM	
DURATION, Td (min)	INTENSITY, I (in/hr)
5	1.8
10	1.42
15	1.19
20	1.05
30	0.83
40	0.67
50	0.57
60	0.51
70	0.47
80	0.43
90	0.4
100	0.37
110	0.35
120	0.35

Intensity (from table above) 1.17 in/hr
Initial Flow Rate, Qi (cfs) = 0.32 cfs at tc= 15.63 min

$$Q_i = C_c * I * A_t / (43200)$$

where,
 Composite Cc = 0.45
 Intensity, I = 1.17 in/hr at Td = 15.63 min
 Total Area, At = 26866 ft^2

SOUTH GLENWOOD APARTMENTS STORMWATER RUNOFF CALC'S - ENTIRE SITE

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POST-DEVELOPMENT

ROOF CALCULATIONS

ROOF AREA (FT^2)	8183	
C-VALUE =	0.9	
S =	25%	
L (ft) =	100	
tc (min) =	1.23	$tc = 1.8(1.1 - C)L^{.5}/S^{.3333}$, (Corps of Eng. Eqn.)

HARDSCAPES & DRIVEWAY CALCULATIONS

DRIVEWAY AREA (FT^2)	11638	
C-VALUE =	0.9	
S =	5%	
L (ft) =	80	
tc (min) =	1.88	$tc = 1.8(1.1 - C)L^{.5}/S^{.3333}$, (Corps of Eng. Eqn.)

LAWN CALCULATIONS

LAWN AREA (FT^2)	7045	
C-VALUE =	0.3	
S =	2%	
L (ft) =	150	
tc (min) =	13.30	$tc = 1.8(1.1 - C)L^{.5}/S^{.3333}$, (Corps of Eng. Eqn.)

Total Time of Conc., Tc =	13.30	min (landscaping @ north of proposed building)
Composite Cc =	0.74	
Total Area, At =	26866	ft^2

TABLE 4920.B JACKSON IDF* CURVE DATA - 100-YR STORM	
DURATION, Td (min)	INTENSITY, I (in/hr)
5	1.8
10	1.42
15	1.19
20	1.05
30	0.83
40	0.67
50	0.57
60	0.51
70	0.47
80	0.43
90	0.4
100	0.37
110	0.35
120	0.35

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STORMWATER RUNOFF CALC'S - PARKING AREA

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Intensity (from table above) 1.27 in/hr
Final Flow Rate, Q_f (cfs) = 0.59 cfs at t_c = 13.30 min

$$Q_f = C_c * I * A_t / (43200)$$

where,

Composite C_c = 0.74

Intensity, I = 1.27 in/hr at T_d = 13.30 min
Total Area, A_t = 26866

Post and Pre-Development Diff = 0.26 cfs 117 gpm

Calculate Required Storage (V_d)

EQUATIONS:

$$Q_d = C_c * I * A_t / (43200)$$
$$V_d = (Q_d - Q_i) * ((Q_d - Q_i) / Q_f * T_d) * 60$$

Where,

Composite C_c = 0.74
Intensity, I = 1.27 in/hr
Total Area, A_t = 26866 ft²
Final Flow Rate, Q_d (cfs) = 0.59 cfs at t_c = 13.30 min
Initial Flow Rate, Q_i (cfs) = 0.32 cfs at t_c = 15.63 min
Duration, T_d = 13.30 (min)

Storage Volume = 93.0 ft³
Dry Bottom Basins and Subsurface Detention

Note: Proposed parking area will be fully detained per calculations below so actual required detentions will be 35 cu. ft. Suggestion is to apply a factor of safety of 1.5 resulting in a minimum required onsite detention of 53 cu. ft.

SOUTH GLENWOOD APARTMENTS STORMWATER RUNOFF CALC'S - ENTIRE SITE

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Parking Area Stormwater Design

Design Flow and Storage for Sand/Oil Sep. and Detention/Infiltration

HARDSCAPES & DRIVEWAY CALCULATIONS

DRIVEWAY AREA (FT^2)	7328	
C-VALUE =	0.9	
S =	4%	
L (ft) =	90	
tc (min) =	2.17	tc = 1.8(1.1 - C)L ^{0.5} /S ^{0.3333} , (Corps of Eng. Eqn.)

Total Time of Conc., Tc =	2.17	min (landscaping @ north of proposed building)
Composite Cc =	0.90	
Total Area, At =	7328	ft^2

TABLE 4920.B JACKSON IDF* CURVE DATA - 100-YR STORM	
DURATION, T _d (min)	INTENSITY, I (in/hr)
5	1.8
10	1.42
15	1.19
20	1.05
30	0.83
40	0.67
50	0.57
60	0.51
70	0.47
80	0.43
90	0.4
100	0.37
110	0.35
120	0.35

Intensity (from table above)	2.01	in/hr	
Final Flow Rate, Q_f (cfs) =	0.31	cfs at tc = 2.2 min	138.1 gpm
Minimum Sand/Oil Separate Size	1380.6	gal (10 x influent flow rate)	
Sand/Oil Separate Size	1500	gal	

SOUTH GLENWOOD APARTMENTS
STORM SEWER SIZING

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Max. WW Flows in Proposed 6-inch Sewer Collector

Mannings Open Channel Pipe Calculations

Pipe Dia, ID	6	in
Flow, Q	138	gpm
Mannings Roughness (PVC), n	0.009	-
Pipe Slope, S	1.500%	%

Flow, Q	0.308	cfs
Pipe Dia, ID,	0.500	ft
Pipe Area, A	0.069	ft^2
Pipe Per, P	0.666	ft
Normal Depth, YN	0.191	ft
Theta	152.6	deg
Top Width, T	0.49	ft

Manning's Eqn	7.8412E-07	-
Theta	2.664	rad

Normal Depth, YN	2.29	in
Velocity	4.47	ft/s
% Full	35.1	%

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Jackson, Wyoming

**SOUTH GLENWOOD APARTMENTS
STORMWATER RUNOFF CALC'S - PARKING AREA**

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Parking Lot Subsurface Detention/Infiltration Design

(1) DURATION, T _d (min)	(2) INTENSITY, I (in/hr)	(3) Post Development Flow Rate, Q _f (cfs)	(4) Post Development Volume of Runoff, V _f (ft ³)	(5) Volume Infiltrated by Perc. Bed over Storm Duration, V _{inf} (ft ³)	(6) Total Volume Storage + Infiltration Ability V _T (ft ³)	(7) Volume Not Detained (V _T -V _f in ft ³)	(8) Storage Volume Factor of Safety
5	3	0.46	137	19.7	273.1	All Stored	1.99
10	2.33	0.36	213	39.3	292.8	All Stored	1.37
15	1.9	0.29	261	59.0	312.4	All Stored	1.20
20	1.65	0.25	302	78.7	332.1	All Stored	1.10
30	1.3	0.20	357	118.0	371.4	All Stored	1.04
40	1.08	0.16	396	157.3	410.8	All Stored	1.04
50	0.95	0.15	435	196.7	450.1	All Stored	1.03
60	0.82	0.13	451	236.0	489.4	All Stored	1.09
70	0.74	0.11	474	275.3	528.8	All Stored	1.11
80	0.65	0.10	476	314.7	568.1	All Stored	1.19
90	0.61	0.09	503	354.0	607.4	All Stored	1.21
100	0.56	0.09	513	393.3	646.8	All Stored	1.26
110	0.52	0.08	524	432.7	686.1	All Stored	1.31
120	0.48	0.07	528	472.0	725.4	All Stored	1.37

Equations (Note: Some parameters are provided below under "Detention Basin Storage Volume.")

Column 1	Same as TABLE 4920.B
Column 2	Same as TABLE 4920.B
Column 3	$Q_f = C_c \cdot I \cdot A_d / (43200)$
Column 4	$V_f = Q_f \cdot T_d \cdot 60$
Column 5	$V_{inf} = A_e \cdot P_r \cdot T_d$ (see below for A _e & P _r)
Column 6	$V_T = V_B + V_{inf}$

Perc. Bed Sizing

Perc Bed Area	384	ft, 12' x 32' bed
Perc Bed Depth	1	ft
Storage Volume	253	cu. ft - assume (conservatively) 8" void spacethroughout infiltration bed
Perc. Bed Effective Area (include side wall), A _e	472	ft ² (Note: Effective wall depth is assumed to be 12")
Perc Rate	10	min./inch - assume topsoil and loess will be removed to native pitrun
Perc Rate, P _r	0.0083	ft/min
Infiltration Rate for given Basin Area	0.066	cfs